THE Johns Hopkins MAGAZINE

April 1950

There is strong evidence these days that thinking people are growing more and more interested in what America's free universities are doing. Their interest is understandable. For in the universities today are activities in which everyone, be he scholar or laborer, has a serious stake. ✶ But the man or woman who wants to keep up with developments in the universities—or even in a particular university—has a hard time doing so. There is an abundance of scientific journals, trade journals, medical journals, engineering journals, each devoted to the single field, or fraction of a field, which it represents. But for the person who wants a general, non-technical picture of developments in fields besides his own, there has been little help, even from the universities themselves. ✶ To provide such a picture, at least of the activities at one university, Johns Hopkins has established this magazine. It is not intended as a magazine in which the reader will find an exhaustive treatment of his own specialty; if he looks for that, he will be disappointed. It is for the busy person who desires a quick, panoramic view, who wishes to "keep his oar in" areas beyond his own, that the Johns Hopkins Magazine has been designed. ✶ It is, frankly, an experiment. If the magazine fills a need as the University hopes it will, it will be continued. If, to do the generally informative job it aims to do, its approach needs altering, that will be done. But the end result, we hope, will be the performance of a genuine service to the alumni and other friends of Johns Hopkins —and, perhaps, to the cause of free research and education as a whole.

THE Johns Hopkins MAGAZINE

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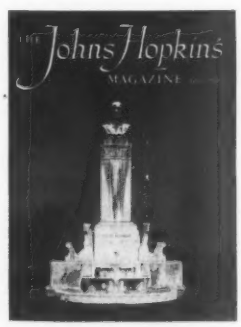

The Cover

This monument to Johns Hopkins, founder of the University, stands in the center of North Charles Street in Baltimore, just opposite the Homewood campus. The figures are Science, symbolic of the University, and Healing, symbolic of the Hospital.

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Johns Hopkins

1940–1950

A critical decade brought new ideas, new organizations to the University. Now they are teamed to meet the grim challenges of an uneasy peace.

By P. STEWART MACAULAY

AMONG HUMAN institutions none, perhaps, should be so broadly integrated with its surroundings as the university. Its very name implies a comprehensive concern with dynamic forces, wherever they may exist. It should be at once local, national, international—and cosmic. It should affect its environment at least as much as it is affected by it.

As ideas and discoveries—many of them born in universities—move out into society to modify it, so the university must adapt itself to the changes it has helped to bring about. Ultimately the process becomes an endlessly reversible reaction and the initiating force becomes unimportant, as in the case of the chicken and the egg.

The speed with which the reaction takes place, however, can be vitally important both to the university and to society. In the American scene, and within the last ten years, the pace has been accelerated from sedate to frantic, and then back a few steps to a postwar velocity still far in excess of the level at which the period began. It will be the purpose of this article to trace roughly the effects upon one university—John Hopkins—of the events of a decade which (one may fervently hope) may prove to be the most critical in the history of the world.

The years immediately preceding 1940 were not entirely static. Hopkins was engaged in overcoming the effects of a major depression which had created both financial and personnel problems for most educational institutions. In spite of a fairly active program of rebuilding, however, the University remained small and simple in structure in the years leading up to 1940, devoting itself principally to the advancement of knowledge and not too deeply concerned about the immediate acceptance of its product by the world at large. Its relationships with other institutions were cordial but not very comprehensive. Its contacts with government, business, and industry grew mainly out of the personal interests and associations with members of the faculties. Organized cooperation by the University with these groups on a large scale and broad front had not yet begun.

Two events of 1939 changed all that. In February four American laboratories, including the chemistry laboratory at Johns Hopkins, reported almost simultaneously that nuclear fission had been achieved. A few months later the German forces invaded Poland. These two occurrences, coming so closely together, added up to an inevitable conclusion: the United States ultimately would be drawn into the war, and it would be a war whose sinews would be derived in unprecedented measure from scientific minds and scientific laboratories.

At the beginning of the 1940–1950 decade, Hopkins scientists and Hopkins laboratories were beginning on a rapidly-increasing scale to turn their efforts toward national defense. Both university and governmental agencies, working in unfamiliar relationships, sacrificed time, money, and energies as they worked in an atmosphere of haste and confusion toward a deadline that was closer than they knew. Soon, however, some order came out of this chaos and freer and more effective exchange between scientists and government developed as men of the stature of Bush, Compton, and Conant moved to Washington to take charge.

At the peak of the scientific war effort, Hopkins was engaged in as many as seventy-five research activities simul-

MR. MACAULAY is Provost of the Johns Hopkins University.

THE HOPKINS HOMEWOOD CAMPUS (above) has become the center of scores of new University activities in the past decade. Some are located in Baltimore, others as far away as Point Barrow, Alaska.

taneously. They ranged in size from the Applied Physics Laboratory at Silver Spring, Maryland, which directly or indirectly engaged thousands of persons and spent millions of dollars, to small, one-man projects involving only a few weeks of time and a few dollars of expenditure. The program covered the whole range of the University's scientific competence. While weapons were being designed or improved on the Homewood campus, medical scientists across town sought to reduce mortality and protect the health of troops on two fronts. Many of the medical problems, notably tropical diseases and high altitude flight, were peculiar to this war.

The University did not limit its wartime activities to scientific research. It became almost equally engrossed in the political, economic, and social problems created by the war. Members of the faculty, on leave to the armed forces or civilian agencies, helped to frame programs of finance and production. Others were engaged on problems of military strategy and still others in the creation of American policies for the postwar period.

At first imperceptibly, and then more rapidly, the sum of all these activities had their effect upon the University's concept of its responsibility as a social institution. As it became clearer and clearer that the United States was to emerge from the war an international force of unprecedented power and influence, so the University tended more and more to adjust its internal affairs in terms of new responsibilities which it, as a very small unit in the American scheme, would have to assume.

The entire wartime program at Johns Hopkins (as at other universities) was a response to a series of emergency situations. When the war ended, there were grave questions as to which, if any, parts of it should be built permanently into the institution. What sort of adjustment should be made to take care of the great influx of veteran students? Would the wartime pattern of government-sponsored research be continued and, if so, what should the University's attitude be toward such research? And, in the same vein, to what extent had the "task force" technique become an inevitable adjunct to scientific progress, replacing, as a whole or in part, the kind of individual research which had been so productive in earlier years? What new objectives or new areas of interest should be developed to enable the University

Phillips Studio

DETLEV W. BRONK has been president of the University since early in 1949. The new biophysics department was established under his leadership.

Blakeslee-Lane

LOWELL J. REED has been named vice president of the University and Hospital, providing an important administrative link between the two institutions.

to meet its share of the new responsibilities which the nation had assumed in world affairs? Finally, what administrative or organizational changes were necessary to implement decisions based on the questions above? The remainder of this article will be devoted to a brief glimpse at the University as it stands today after several years of intensive effort to find answers to these questions.

The veteran problem was handled rather simply by a decision that standards would not be lowered and that admissions would be restricted to the numbers which a faculty of optimum size could care for. The next step was to provide the faculty, for gaps created by deaths, retirements, and resignations in the war period had, of necessity, been left unfilled.

This job was a long and difficult one. President Bowman frequently remarked that the number of appointments made at Hopkins in the two years following the war was sufficient to staff completely a university of moderate size. Yet it may be asserted firmly that the faculty additions in this period measured up to Hopkins standards in every respect. No senior appointment was made without careful scrutiny by committees jealous of the University's reputation for scholarly productivity and zealous in maintaining that reputation. The rebuilding was equally important in all of the University's schools including the departments of the arts and sciences, engineering, medicine, and hygiene and public health.

Among the new appointees and the returnees from government service there were some who wished only to get back to their laboratories and their libraries, to work again in splendid isolation with their faces turned firmly away from the "organized" research and planning in which they had participated. Others recognized certain values in the wartime techniques. They looked at the tremendous problems yet to be solved, and were convinced that teamwork—within the institution and between it and outside agencies—offered a real opportunity for effective scientific and scholarly work. The University's attitude was tolerant of both points of view, and circumstances made it possible to encourage both. Thus some of the questions posed above began to be answered.

JOHNS HOPKINS was one of the first universities to reach a firm policy decision with respect to continuance of "research in the national interest" after the fighting had stopped. Following the spectacular success of the proximity fuze, the Navy, which had sponsored the Applied Physics Laboratory, formally requested that this organization be continued and that its activities be directed mainly to a new objective—the development of effective guided missiles. The trustees of the University, impressed, no doubt, by the obvious fact that the national emergency was far from over, decided to continue the Laboratory. There was a period of reorganization, from which it emerged as an autonomous division of the University, of stature comparable to that of the previously-existing schools and divisions. Today it has its own advisory board, which reports directly to the president, and a committee of trustees meets regularly with representatives of the Laboratory and the Navy to assist in the development of long-range policies.

While decisions were being made regarding the Applied Physics Laboratory, it was becoming increasingly apparent that other demands upon the University by governmental agencies were not going to diminish. In fact, there was scarcely a letdown. As the certainties of war gave way to the uncertainties of an uneasy peace, the need for university research in the area of national defense actually increased. In addition, industries, many of which had become actively associated with universities for the first time during the war, began to seek academic aid in the solution of some of their problems. And there were people on the faculty, as we have noted above, who believed in this kind of cooperative research and were anxious to devote at least a portion of their time to it.

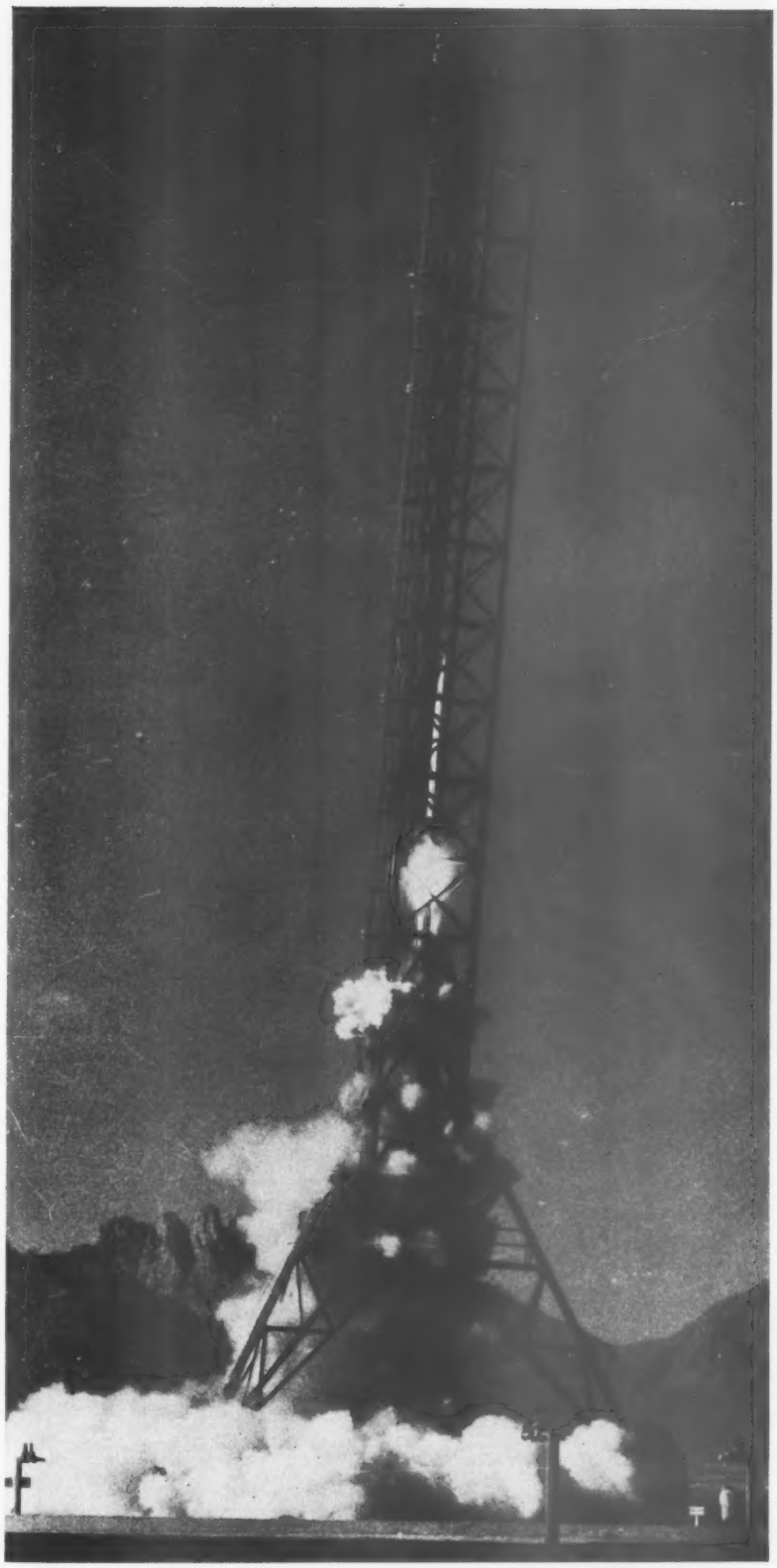
From 1941 to 1945 it had been possible to administer the program of sponsored research through existing offices, which had been relieved of many of the burdens attendant upon normal teaching and research activities. With the restoration of regular academic functions on a larger than prewar scale, this relatively small organization could no longer take care of the added burden of contract research. A new agency to handle this work was clearly indicated and the Institute for Cooperative Research was organized. This agency now administers all of the University's contract activities except the Applied Physics Laboratory. Its Advisory Board includes representatives of all of the faculties. It is responsible for the proper conduct of a program which now involves the expenditure of approximately three and a quarter million dollars per year. The projects which it administers are widely scattered. Many are at Homewood; others at the School of Medicine and School of Hygiene and Public Health. One is centered in the Welch Medical Library and a whole group occupies rented space in a building at 1315 St. Paul Street. One project has its headquarters in Washington and still another at Point Barrow, Alaska.

Actually, the Institute for Cooperative Research has a dual function. On the one hand it has direct administrative cognizance over a variety of research activities (governmental or industrial) involving personnel not necessarily members of the regular faculties. On the other hand, the Institute is a service agency to assist faculty members who are willing to devote a part of their time to contract research but who are unfamiliar with, and wish to be relieved of, the "paper work" associated with undertakings of this kind. In these two capacities the ICR is bringing a necessary uniformity to practices which varied widely during the war period.

ONE MAY properly ask why the University is asked to engage in such far-flung activities as those now represented in the ICR program. Basically, the answer lies in the nature of research. It flourishes best in an atmosphere of greatest freedom, which the university can provide better than any other agency. Many competent research scientists are reluctant to work exclusively for the government, yet are perfectly willing and even anxious to contribute their talents to the nation if they can do so under approximately the same conditions as those which prevail in academic life.

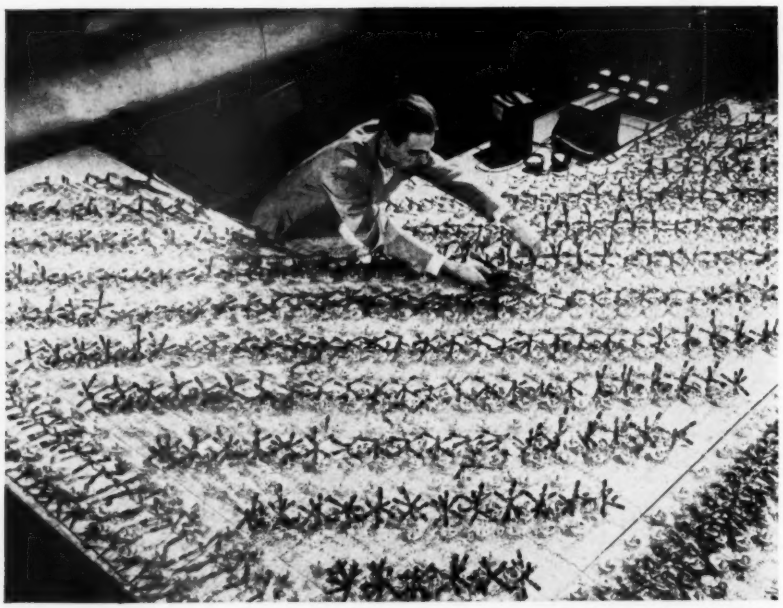
Because both government and universities have recognized this situation and adapted their programs to it, Hopkins and many of its sister institutions today find themselves deeply involved in research activities of a kind and a magnitude which scarcely existed before the war. That is the reason for Hopkins' willingness to lend sympathetic administration and intellectual leadership to such diverse undertakings as the Operations Research Office, which assists the Army in the solution of some of its major strategic, operational, and scientific problems; the Arctic Research Laboratory at Point Barrow, which conducts a variety of investigations of interest to the Navy and, incidentally, to science; and the Chesapeake Bay Institute, which is studying the chemical, oceanographic, and biological characteristics of the nation's largest inland sea under the joint auspices of the Navy and the States of Virginia and Maryland.

EVEN THESE rather complex activities, however, are fairly unspectacular as compared with another enterprise



U. S. Navy-Johns Hopkins (APL) Photo

ROCKET RESEARCH is a leading activity at Johns Hopkins' vast Applied Physics Laboratory at Silver Spring, Maryland. Being launched above is the liquid-fueled Navy sounding rocket "Aerobee," developed under APL's technical supervision for the Navy Bureau of Ordnance.



Brookhaven National Laboratory

AT BROOKHAVEN NATIONAL LABORATORY, Long Island, N. Y., Johns Hopkins and eight other universities are working with the government "to produce the nation's newest and most comprehensive facility for pure research in the nuclear sciences." Above, a technician works on an electrical circuit simulating conditions of current and resistance within an atomic pile.

in which Hopkins has become a partner —the Brookhaven National Laboratory. Here active cooperation among universities has been added to cooperation between universities and government to produce the nation's newest and most comprehensive facility for pure research in the nuclear sciences.

Several years ago representatives of nine universities in the northeastern area were brought together with representatives of the old Manhattan Engineer District to discuss the encouragement of nuclear research in a region which had no Oak Ridge, no Argonne, and no Los Alamos, but which did harbor within its rough boundaries a substantial fraction of the scientific group which had built the atomic bomb. Upshot of the discussions was a decision on the part of the government to build a new laboratory in the northeast, a laboratory planned and equipped with an eye to fundamental research rather than the further development of weapons, and one in which scientists of this populous area could find facilities far beyond the resources of any one institution.

The nine universities—Cornell, Columbia, Harvard, Hopkins, MIT, Pennsylvania, Princeton, Rochester, and Yale—supported the plan and especially the concurrent decision that the new laboratory should be managed in such a way as to create, as far as possible, the atmosphere of a university rather than that of a government installation. The obvious wartime method of achieving this end—operation of the laboratory by one institution under contract with the government—was quickly abandoned in favor of a more daring experiment. It was agreed that the nine universities should combine to form a single nonprofit corporation in which all should be equal partners, and that this corporation should assume responsibility, under contract, for management of the laboratory.

Thus, Associated Universities, Inc., was born. When the Atomic Energy Commission superseded the Manhattan District, it took over the agreed-upon program without substantial change. Soon a contract between Associated Universities and the AEC was signed and the former, operating with government funds, began the creation of a huge research mechanism in the pine flats of central Long Island and on the site of an abandoned army camp. Today the work is well under way, with major facilities nearing completion and with greater and greater participation by scientists from the member institutions and from the region generally. Management is in the hands of a board of eighteen trustees drawn from the nine institutions.

Not all of the postwar changes are of the magnitude of those listed above, but size is no measure of significance in the University's scheme of things and some of the developments which are less impressive in scope are equally important as indicating trends. In selecting a few for special attention, we may turn first to the medical side of the University and then to that complex loosely referred to as the "Homewood schools."

IN THE Hopkins medical environment, perhaps more strikingly than elsewhere in the University, distinguished heads of departments reached the age of retirement at a time when replacements were difficult or impossible. But, as soon as the war ended, young men were brought in to fill these vacancies. Simultaneously, it was decided to strengthen some of the clinical departments by increasing the number of senior men devoting full time to departmental interests. The new appointees, backed up by a strong contingent of older men, soon established themselves in such a way as to uphold and actually to enhance the prestige of the University as a center of medical training and research.

New ideas and new philosophies with respect to medical research accompanied the new faces in the Hopkins schools. Again there was a tendency on the part of some to emphasize teamwork. National group attacks on such defiant ills as cancer, heart disease, and rheumatic fever were represented at Hopkins by new groupings of research teams, new integrations involving pre-clinical and clinical departments, and new relationships with the sister institution, the Johns Hopkins Hospital.

The founder of the two institutions, amazingly wise in his day, did not foresee the complexities of modern medicine. His requirement that Hospital and University be separate corporations—with some trustees holding membership on the boards of both—caused few difficulties in the early days. As time passed, however, the slow-moving mechanisms by which common interests were reviewed and common problems resolved, became inadequate.

With the close of the war these relationships demanded a different kind of organization. The first step was the creation of a Joint Committee of Trustees, with four representatives each from the boards of the University and Hospital, and with the president of the University serving as chairman. This committee had no power but, meeting regularly to discuss problems of mutual interest, it was able, through the two

groups of members, to present to the separate boards issues which already had been studied in detail and upon which tentative but enlightened decisions had been reached.

The next step, and an obvious one, was to create an administrative mechanism through which policy questions involving the School of Medicine, the School of Hygiene and Public Health, the Hospital, and the Welch Medical Library might be presented to this committee. Dr. Lowell J. Reed, formerly director of the School of Hygiene and Public Health, was named vice president of the University in charge of medical affairs. After a brief period of experimentation with this scheme, Dr. Reed's title was changed to Vice President of the University and the Hospital, by action of the two Boards of Trustees. Now he serves as chairman of the Medical Planning and Development Committee, a professional group representing both institutions, and executive officer for the Joint Committee of Trustees. Policy decisions agreed upon in these committees go to the separate boards for final action.

This sounds like a cumbersome procedure; actually it has worked very well. Questions relating to finances, new construction, inter-school or inter-institutional activities, now flow through these channels smoothly and in such form that objectives are clearly understood and quickly acted upon.

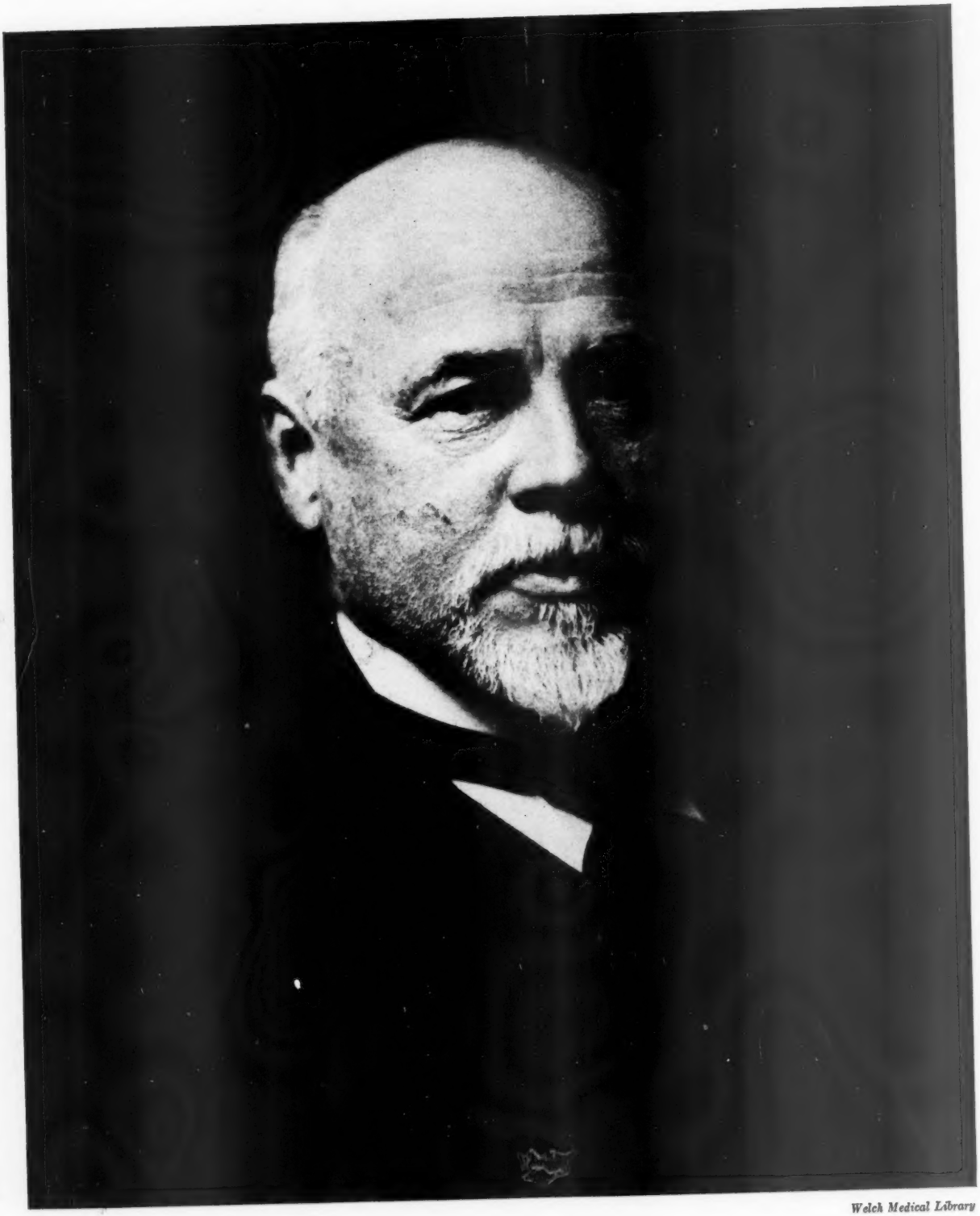
ON OUR WAY back to the Homewood schools, it may be well to stop midway for brief reference to an enterprise which is equally at home in the medical area and at Homewood. When, immediately after the war, a committee was set up to study the need for a department of biophysics, its report was emphatically affirmative and it carried the further recommendation that the department be organized to embrace appropriate interests ranging from the basic sciences at Homewood through the clinical sciences in the School of Medicine.

Having approved these principles, the University was fortunate in two respects. In the first place, it became the recipient of a very timely gift from Mrs. Thomas Courtney Jenkins, for the creation of a fund to support biophysics, and to be named in honor of her husband, the late Thomas Courtney Jenkins. In the second place, Hopkins was able to attract a distinguished group of scientists who had been associated for many years with Dr. Detlev W. Bronk, the new president, and to have the leadership of Dr. Bronk himself in establishing the new undertaking.

The Department of Biophysics is the only one within the University which is not directly affiliated with one or another of the schools. It is a real "University department," with relationships extending into the science and engineering departments at Homewood as well as into the School of Medicine and the School of Hygiene and Public Health. It occupies space both in East Baltimore and at Homewood and ultimately new quarters for it will be provided in both areas.

Continued on page 32

TELEVISION CAMERAS and microphones are a new arrival on the traditional operating-room scene at Johns Hopkins. They bring close-up views of operating techniques to medical students and surgeons' groups.



Welch Medical Library

Dr. Welch at sixty

WILLIAM HENRY WELCH

A tribute on the centenary of his birth

By ALAN M. CHESNEY

THE OCCURRENCE, on April 8 of this year, of the one hundredth anniversary of the birth of William Henry Welch is an event that cannot be allowed to pass without notice by the two institutions with which he was connected during almost his entire professional life, and upon which he cast so much lustre throughout the half century of that connection. Professor of pathology in the University and pathologist to the Hospital, dean of the medical faculty, chairman of the executive committee of the University, director of the School of Hygiene and Public Health, and, finally, professor of the history of medicine, Dr. Welch still stands out, sixteen years after his death, as the major figure that has developed in the three Hopkins medical institutions since their inception.

It is doubtful if any American medical man ever received, at the summit of his career, such widespread acclaim as that which was accorded Dr. Welch during the latter part of his life. His sixtieth birthday was made the occasion of a large public dinner in Baltimore at which S. Weir Mitchell, noted physician and novelist, recited a poem which he had composed in honor of Dr. Welch, while his eightieth birthday, which was celebrated in Washington, took on the proportions of a national and international event, for the proceedings, in which the President of the United States himself participated, were broadcast to Europe and celebrations in his honor were held that same day in London, Paris, Tokyo, and Peiping. Surely the person whose career gave rise to such extraordinary manifestations of respect and admiration deserves, on the hundredth anniversary of his birth, something more than a perfunctory notice of the event and the University and Hospital have, therefore, joined together in arranging for an appropriate celebration to commemorate it. The exercises will be held on April 15 although Dr. Welch's birthday actually falls on April 8. The reason for the shift to the later date is a conflict with the Easter holidays.

Dr. Welch's interests were so widespread and his attainments so varied that it is difficult to find a single word or phrase which completely characterizes him. Perhaps "medical statesman" comes nearest to it, for his activities had a far-reaching influence upon medical education, medical science, and the preservation of the nation's health, an influence, indeed, that went far beyond the city and state in which he lived, or the university and hospital with which he was so intimately identified for most of his life.

ALTHOUGH Dr. Welch came of a long line of Connecticut doctors, he did not at once embark upon the study of medicine after graduation from Yale College in 1870, but sought an opportunity for a teaching career in the classics and in fact taught in a small newly-organized private school in Norwich, New York, for a year. The school was not a success, and Welch then turned, somewhat reluctantly, it would appear, to medicine as a career. He returned to Yale to study chemistry in preparation for entrance to a medical school and the autumn of 1872 found him enrolled as a student in the College of Physicians and Surgeons of New York City, from which he graduated in 1875. He then entered upon an interneship at Bellevue Hospital and almost at once became greatly attracted to the science of pathology which was to become his chief medical interest in life. Having finished his interneship and desiring to learn more about medicine, he set out for Europe in the spring of 1876 and there is no doubt that this venture was the most

DR. CHESNEY is Dean of the Medical Faculty of the Johns Hopkins University.

fortunate step of his entire life, for it brought him into contact with many of the foremost medical scholars of the day and revealed to him the attractive features that an academic career in the scientific study of disease might afford.

Germany at that time was the acknowledged center for the study of pathology, the science which deals with the changes wrought in the human body by disease and injury, and on this first visit to Europe Welch had abundant opportunity to work under men who were masters in the field. He had also the opportunity to become familiar with the use of experimental methods in the study of physiology, under Carl Ludwig, and with their use in the study of pathology under Julius Cohnheim, who was later to recommend him to President Gilman for the professorship of pathology in the Johns Hopkins University. It is small wonder, then, that the young American physician, projected into such an environment and exposed to such teachers, should wish to embark upon a career as a teacher in pathology when he returned to New York in 1878 after his two years of study in Europe.

Simon Flexner and his son have told us, in their definitive biography, of Welch's endeavors to obtain a teaching post in pathology in New York, how a small laboratory was finally made available for him at Bellevue Hospital Medical College, where he began his first instruction in the subject, and how he resisted the attempts of his friends to divert him into a career of private medical practice. He would not be diverted, however, and it was just as well for the sake of the Hopkins medical institutions that he was not, for had he been, the development of those institutions and others as well, with which he was to be connected in later years, would have been vastly different, in all probability, from what it turned out to be.

Welch's selection as the first professor of pathology in the Johns Hopkins University occurred in 1884 and, as has been said above, was the result, at least in part, of a recommendation from Professor Julius Cohnheim of the University of Breslau to President Gilman when the latter was seeking to establish a medical faculty for the new university in Baltimore. Following his appointment to the Hopkins staff Welch at once went abroad, this time to acquaint himself with the principles and techniques of the new science of bacteriology which had come into being since his first trip to Europe eight years before, and it is of interest that the first lectures which he gave in the University, upon his return from his second trip to Europe, a series of nine in number, were entitled "Micro-Organisms in Disease." From that time until he retired in 1931, he taught classes in the Johns Hopkins University albeit his activity in this regard diminished considerably as time went on, it must be admitted.

THE FACT that the Medical School was not yet established at the time the Johns Hopkins Hospital was opened in 1889 did not dampen Dr. Welch's desire to expound the newer knowledge of disease. With the aid of William Councilman he at once set about organizing courses in pathology and bacteriology for the physicians of Baltimore and elsewhere. These were given in the Pathological Laboratory of the Hospital even before that institution was formally opened, were continued for several years thereafter, and proved to be very popular. Some of those early postgraduate students, such as Walter Reed and Simon Flexner, were destined to become distinguished figures in American medicine, and many of them have testified to the inspiration which they received from their association with Dr. Welch in the formative stages of their careers. Indeed, Dr. Welch probably gave more time and effort to these early postgraduate courses than he ever did to the undergraduate medical students after the School of Medicine was finally opened for he seems, soon after that date, to have shifted to his subordinates the responsibility for organizing the laboratory instruction in pathology and

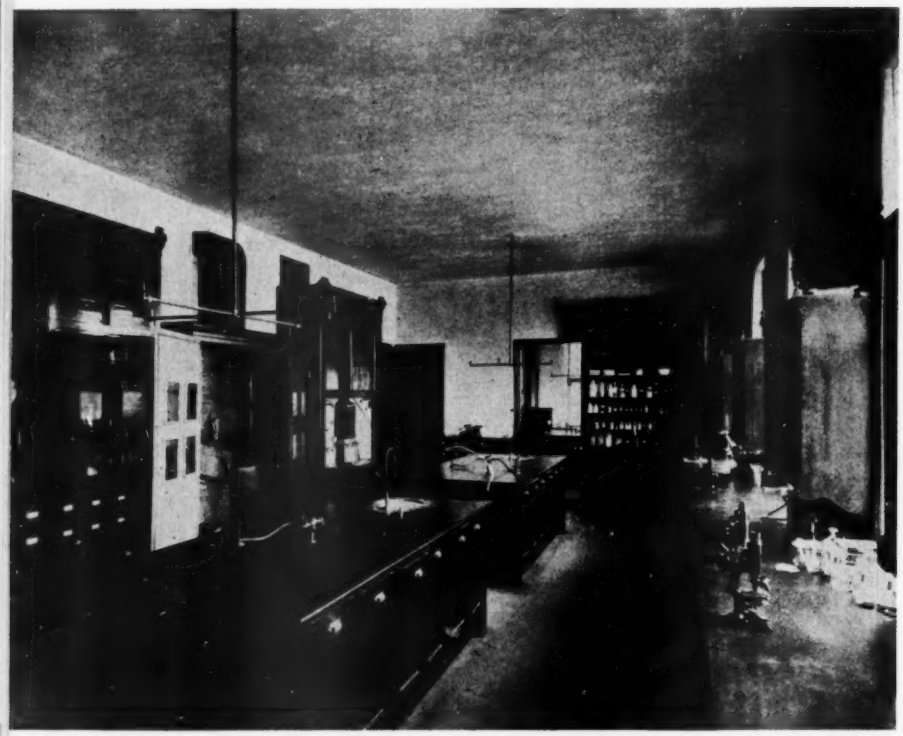
Centenary Events

The following events have been scheduled for the celebration of the one hundredth anniversary of Dr. Welch on April 15, to which Dr. Chesney refers in his article:

2 TO 4 P. M.: Exercises in Hurd Hall at Johns Hopkins.

4 P. M.: Tea at the Welch Medical Library.

7:30 P. M.: Subscription dinner in the Charles Room of the Sheraton-Belvedere Hotel, Baltimore.



Gutekunst

PATHOLOGY was Dr. Welch's chief medical interest in life. Under his direction the Pathological Laboratory at Johns Hopkins was a Mecca for students from all over the country. Above, an early photograph of one of its rooms.

bacteriology, retaining for himself the duty of giving lectures on occasion and of conducting the Monday noon recitation class in pathology. The actual conduct of autopsies and the systematic scrutiny and description of the specimens of tissue removed at autopsy, duties which constitute the actual day-to-day routine of a department of pathology, were left to others soon after the Medical School got under way.

In spite of his increasingly infrequent appearances before the class in pathology in his later years, Dr. Welch had a strong hold upon the students and his nickname, "Popsy," attested to the respect and affection in which he was held by all of them. They could not fail to appreciate the lucidity of his presentations, the breadth of his knowledge of the subject matter under consideration, nor the faculty, which he possessed to an unusual degree, of investing each topic which he discussed with a measure of interest that seemed almost to transcend, at times, the intrinsic value of the subject itself. Indeed, many a time the discussion which Dr. Welch gave of a colleague's paper in the meetings of the Johns Hopkins Medical Society was a clearer and better exposition of the subject than was the paper itself.

Nor could the students fail to appreciate the essential dignity of the man himself. To have attempted horseplay in any of his classes was unthinkable, and everything that he had to say was always listened to with the greatest attention.

Dr. Welch had a highly developed appreciation of the need for furthering scientific investigation in the medical field, both for the sake of the knowledge which it yielded and for its influence upon teaching. He always emphasized the importance of the teacher carrying on investigative work, believing that it enhanced greatly the value of his teaching, and yet Welch's own original contributions to pathology and bacteriology were comparatively few in number. The discovery of the bacterium which bears his name, *Clostridium welchii*, better known to older generations as *Bacillus welchii*, or the gas bacillus, was a joint discovery with G. H. F. Nuttall, and Welch himself never embarked upon the investigation of a long-term problem that would have required years for its solution. Instead, his energy took the form of expounding the value of medical research rather than the actual doing of it, and perhaps this was his greatest contribution to American medicine for there can be no question but that his voice was heard in quarters from which strong financial support might be forthcoming and in time what he had to say came to influence greatly the thinking of those who were in a position to assist in the development of medical education and medical research in this country.

Blakeslee-Lane

PUBLIC HEALTH was Dr. Welch's second interest. His crowning achievement in the field was the establishment, with Dr. William H. Howell, of the Johns Hopkins School of Hygiene and Public Health (above).

His recognition of the practical values which flow from unhampered scientific investigation in the medical field must have had much to do with directing his thoughts toward the field of public health in which he became interested comparatively early in his career. He gave much time and thought to the development of Maryland's State Board of Health and through his own personal charm and persuasiveness was able to enlist the interest of laymen and secure their cooperation in obtaining the legislation and the appropriations which were vital to the development of public health in this state. His crowning achievement in the field of public health was of course the establishment of the School of Hygiene and Public Health in the University, although it must be remembered that in the actual organization of this enterprise he had the incalculable benefit of the wisdom and administrative experience of Dr. William H. Howell, the assistant director. Surely the successful development of the School during its initial years was due in no small

Blakeslee-Lane

THE WELCH MEDICAL LIBRARY at Johns Hopkins is a fitting memorial to the man whose name it bears. Above, his bust commands the library's main staircase. The initiation of the Institute of the History of Medicine at Hopkins was for Dr. Welch the fulfilment of an avocational dream.

measure to Dr. Howell as well as to Dr. Welch.

The final phase in his university career, namely the initiation of the Institute of the History of Medicine, must be regarded as the fulfilment of an avocational dream, for Dr. Welch was certainly an amateur in the field of medical history and would have been the first to say so. Yet his interest in the field dated back many years, for we find him taking the initial steps, shortly after the Hospital was opened in 1889, to found a club for the presentation of subjects relating to medical history and he never lost interest in the subject. He could not possibly have expected to make any contributions of importance to medical history, however, at the time he assumed the chair, and there is little doubt that he regarded himself as a stopgap until the right man could be found to take over the post. Indeed, he actually asked to be and was retired before opinion crystallized concerning the choice of his successor.

Physically Dr. Welch was short and stocky in build, quite stout in later life, with a short neck and head carried a little to one side. He enjoyed good food, as his girth attested, and was a great lover of salt-water bathing. He had lodgings in the eight hundred block of St. Paul Street but spent most of his time at the University Club, of which he was president for many years, and at the Maryland Club, where he practically preempted a small room on the second floor as his own private writing room. Almost all of his letters were written in longhand, and he seems never to have quite learned how to make use of the services of a stenographer.

Dr. Welch was no absent-minded professor with his head in the clouds. On the contrary, he had a very clear idea of the practical aspects of a situation, of when not to push a cause in which he was interested or the undesirability of pursuing a line which would ruffle the feelings of persons in authority. He was a worldly person in the best sense of the word, fully alive to the importance of money in establishing and supporting the institutions in which he was interested, but not concerned in getting money for himself alone. Being a bachelor he could and did live rather well on his salary and managed to save enough to accumulate a substantial estate which characteristically he bequeathed for the most part to the University.

AND SO this son of New England, educated at Yale and trained in medicine in New York and in Germany, came to the Johns Hopkins University at the age of thirty-four as its first professor of pathology, got together the faculty of the School of Medicine and as its first dean got the School under way, trained a number of devoted disciples in pathology who carried his inspiration all over the country, became the first citizen of his adopted state, organized at the age of sixty-seven, when most men are retiring or thinking of it, the School of Hygiene and Public Health of the University, became an international figure in the field of public health, and then, turning his back upon that subject, inaugurated, at the age of seventy-nine, a chair of the history of medicine in the university in which he had long been so prominent a figure. Is it small wonder that this man, whose influence was felt so far outside his own institution, who did so much to foster medical education and research by attracting to it the interest of men of wealth, who had such great wisdom and at the same time such a winning personality, should become the acknowledged medical statesman of his time, or that the eightieth celebration of his birthday should have taken on the proportions of an international event? Hardly. He was an outstanding figure of whom Yale, Columbia, Bellevue, and Johns Hopkins may well be proud. We of Johns Hopkins should rejoice in the fact that of the four educational institutions with which he was connected during his lifetime, it was given to our institution to have the lion's share of his time, powers, intellect, and winning personality.

A science lesson needn't be stuffy on television.

Being educated can actually be a pleasure when

The Professor Takes To TV

By LYNN POOLE

WHATEVER ONE'S OPINION of television may be—and nearly everyone does have an opinion on the subject, which he will gladly give you at the drop of a hat—at least one thing is certain: television is here to stay.

Its growth has been phenomenal. In the beginning, tall tales were fabricated to prove that it was the miracle medium; since then, the rapid advance of television has made the tall tales read like the mildest of understatements. Sixteen million viewers a day, says one conservative estimate. Television may have grown too fast for its own good, but the important thing is, it *has* grown.

What effect it will have on our daily lives, on leisured pursuits, is a moot question. At the moment, it is not our purpose to weigh the merits of current television programming, nor does television programming, vigorously growing youngster that it is, stay still long enough to make such a weighing very

conclusive. But in the middle of the hurly-burly confusion which surrounds nearly everything that the industry is doing these days, it is possible to discern at least one encouraging sign:

Television is beginning to look like one of the greatest boons for the expansion of culture and education since the invention of the printing press. It *can* be, anyway, if the country's educational and cultural leaders will begin now to think and act constructively for future use of the medium.

Johns Hopkins got into television even before Baltimore's first station went on the air. We have been broadcasting more or less regularly ever since. We are still finding out things about television which strengthen our conviction that its future, at least for the "educational entertainment" type of program, is very bright indeed.

Our entry into television was based on the Johns Hopkins belief that "a university has a duty not only to its students but to a wide public including people of all ages who wish to continue their educations." So four years ago the university began to study television as a potential medium through which it might expand its educational contributions.

There wasn't a television station in Baltimore at the time, but things were happening thick and fast in the industry and the opening of a local transmitter was obviously only a matter of time. In 1947, the Baltimore *Sun* announced it would operate one: WMAR-TV.

From this first announcement until the station was on the air, the program director of WMAR and Hopkins officials worked closely together. Johns Hopkins experimented by preparing half-hour science demonstrations of the type which could be shown to future audiences. In March, 1948, the first public, on-the-air telecast was made from Remsen Hall on the Hopkins campus, and for eight weeks these experiments were continued.

Resumed in the fall of 1948, the search for presentational methods continued on a local basis. Then, in December, CBS requested that the "Johns Hopkins Science Review" be carried on its television network.

For both WMAR and Johns Hopkins, the coordination period has been one of research. At the start no one knew much about the technical ability of the camera to transmit scientific demonstrations. There was no past experience to draw on. A search was made for magazine articles, for books which would explain procedure. The search was fruitless. There were no guides, except those written in broad generalities.

DRAWINGS BY AARON SOPHER

With the aid of the technical and production personnel of WMAR-TV, we began our experimenting, hunting for the best possible approach to programming and for techniques of presenting the material.

ONE OF THE FIRST JOBS was an intensive study of educational programs which had been presented on the radio. Again the results were bleak. Except for such programs as Chicago Round Table and Invitation to Learning, the fare was drab, filled with dull talk and soporific material. The impersonal quality of droning voices on radio, we felt, could be overbalanced on television by interest in the visual material presented in a dramatic, exciting manner. But how? We had to work it out for ourselves.

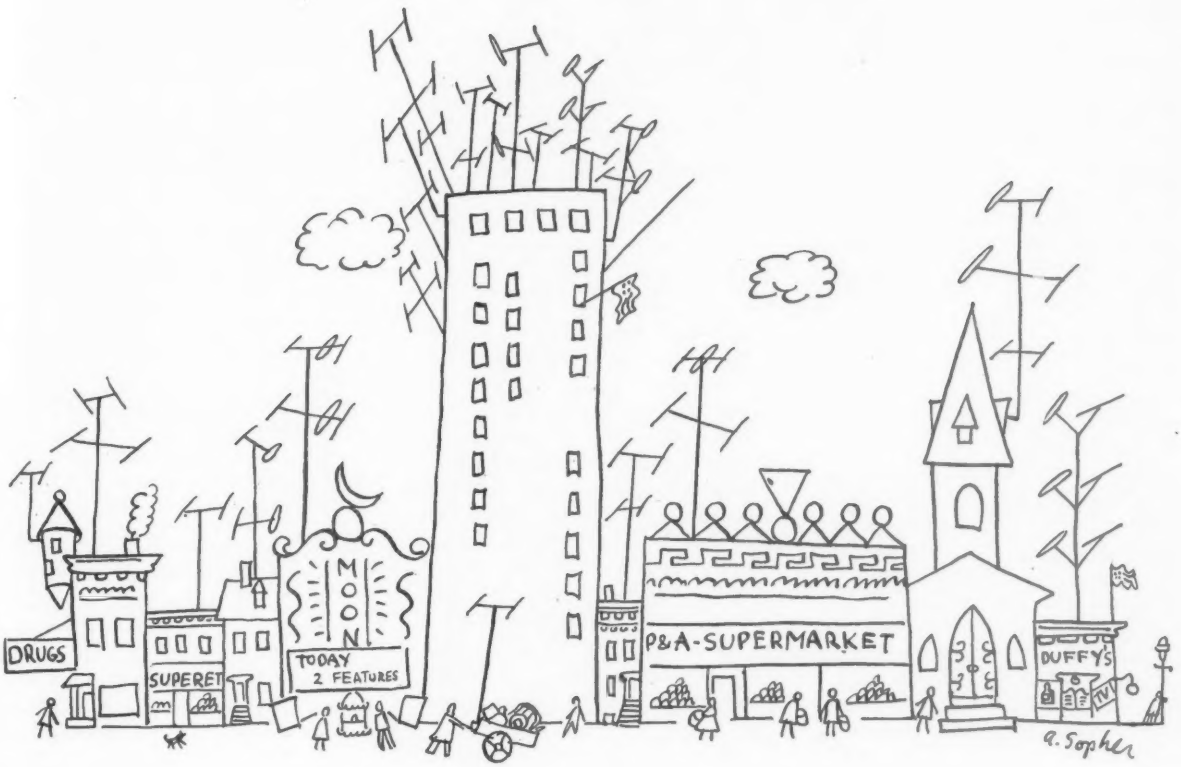
We had a conviction that television programs should not be labeled or even presented as "educational." There is strong resistance, on the parts of many adults and children, to the radio or television program which says, "Sit back and relax a moment. This is going to be good for you. You're going to learn something you did not know before." This may be true, but the listener or viewer is personally miffed if you tell him so. And "educational," in his mind, is very likely to be synonymous with "stuffy."

Therefore television programs had to be devised which would entertain, delight, and hold audience attention while subtly giving viewers information not previously known.

The format which was evolved was successful mainly because it was simple, because it kept a fast pace, and because scientific equipment was in constant motion. Each program opened with a quick flash of what the program was to be about, calculated to arrest the interest of viewers before they could switch to another channel. Then a moderator introduced a scientist, who immediately began demonstrating the subject of the evening. And by a series of correlated experiments, as simple and as dramatic as possible, he developed the subject to a logical conclusion.

A program called "Supersonic Flight," for example, opened with the

TV: "One of the greatest boons for the expansion of culture and education since the invention of the printing press."



showing of the original Wright Brothers' plane, followed by a flash shot on film of a jet craft streaking through the sky.

"Tonight," said an unseen announcer, "we will show you how the science of aeronautics will make it possible for you to fly to Paris after breakfast, hold a business appointment, and be back in Baltimore for lunch. In addition, you will hear from the one man in the world who has already flown fast enough to do this."

Through a series of dramatic demonstrations the guest scientist illustrated how aeronautic engineers had developed the speed of airplanes from thirty-two miles per hour to speeds greater than the velocity of sound. By convincing illustration, he predicted that within our own lifetime we would fly at speeds up to 25,000 m.p.h.

Finally Captain Charles Yeager, Air Force pilot who flew the first supersonic plane, described his experience and showed movies of his plane in flight. The entire program was exciting, held attention, and provided instruction, subtly, for the viewers. Yet it was not sensational. It was dignified, scientific, and honest. The guest scientist was not asked to jump through hoops.

There was the format. The next problem was that of taking a complex scientific development, visualizing it, and distilling it in order to make it entertaining and understandable. This took some doing.

From the first, one unbreakable rule was established: if you can't *show* it, don't talk about it. Somehow or other, a method had to be contrived to illustrate quickly and simply any scientific fact or action.

THIS PRESENTED a challenge each week. How in the world can one demonstrate the action of hemoglobin in the human body—and do it interestingly? It was important to the theme and conclusion of one telecast to do so: to show that hemoglobin carries iron and oxygen through the body. Oddly enough, it was done with toy trucks.

One truck engine-cab was placed on a table. A trailer was hooked to it and filled with a miniature oxygen tank. The truck and trailer were pushed around the table as the scientist described the action as it took place in the body. Back at the starting point, the trailer was unhooked; another, filled with iron, was connected; it, too, moved around the table. This was continued until the complete action of hemoglobin was described.

Viewers learned, by this simple illustration, the function and action of hemoglobin. Yet not one viewer resented the fact that he was being instructed; he was too fascinated by the information being given as the trucks went 'round and 'round.

The scientist's running commentaries, which accompanied the illustrative sequences, created another problem. Simple synonyms were needed to replace the scholarly terminology the scientist used in his laboratory as he talked with colleagues. His ten-dollar words had to be converted into the small-change language understandable to people outside his specialty.

The entire production had to be prepared in complete script form, but before that could be done there were many details to work out. Among them was a major question: Could the television camera see and transmit the demonstration in a convincing manner? Sometimes, it took a lot of experimenting to find out.

One such instance came when a radiologist wanted to telecast the image of a hand on a fluoroscopic screen. Such an image is strong in the sterile darkness of a laboratory; but in the television studio, the lights were bright and they could not be turned off. How could the

camera "see" the hand image on the fluoroscopic screen?

It took an hour and a half, but the problem was solved. The fluoroscopic screen was set in one side of a large box, whose interior had been painted black. In the side of the box opposite the screen we cut a hole, just large enough for the video camera's lens to poke through. Blacked out in this way, the image gave out enough light for transmission to televiewers in their homes.

That was a comparatively simple problem; often, greater patience and ingenuity were needed before a vital demonstration could be televised. Sometimes the actual piece of scientific equipment had to be stripped and its innards exposed in order to perform an experiment. Occasionally, the equipment itself had to be discarded and a mock-up built.

From the outset it was evident that good television programs do not materialize fullgrown an hour before air time. Nor can they haphazardly be tossed together the day before performance. The production of a successful telecast demands careful planning, unexciting labor, ingenuity—and a logical master plan to be followed from start to finish. By trial and error we eventually evolved such a master plan, which was followed in building each of the weekly telecasts.

THE AUTHOR

Lynn Poole, director of public relations at Johns Hopkins, is the guiding hand behind "The Johns Hopkins Science Review," one of television's pioneer informational programs, which he conceived, planned, wrote, directed, and even appeared on. His book, *Science via Television*, published last month by the Johns Hopkins Press, has been called "the most clear and concise exposition of the basic requirements of television planning, writing, and presentation yet written."

During the months and weeks before the program was seen by televiewers, the producers of the Johns Hopkins Science Review were doing a job of research, testing an unknown medium, finding answers to perplexing questions. A great deal of time and energy went into making each week's program entertaining, worthwhile, and honestly scientific. Two hundred and two man-hours were invested in the production of "Supersonic Flight" alone. And although, in the past two years, television has come a long way, producing the program today is still a king-sized job, full of experiments and surprises.

Is it worth the time, the research, the effort? We believe it is. It has stimulated other educational institutions to experiment with education via television. And, judging from the "fan mail" we receive, the effort seems to be appreciated by high school and college students, housewives, doctors, lawyers, bankers, taxicab drivers, school teachers.

"Many sincere thanks for your wonderful series," write Mr. and Mrs. J. A. G. and family of New York. "They are greatly appreciated by our family because they are instructive *and* entertaining."

"It should serve as an example of what television can and should do," write a couple in New Jersey.

"I think your program will finally help to educate the people to the realization of the importance of science. For the student, such as my thirteen-year-old son, it at last gives him something to bite on!" So writes a man in Philadelphia.

THERE IS EVIDENCE that the use of TV as an educational medium is spreading. Nearly every university and art museum which has a television station near by is coordinating with that station, providing worthwhile programs or program material. Iowa State College is even building a transmitter on its campus, from which will be broadcast programs to a rural audience within a forty-five-mile radius.

WBAL-TV, in cooperation with the Baltimore Public Schools, and three Pennsylvania stations, cooperating with the Philadelphia schools, have been experimenting with telecast teaching programs. They are beamed into classrooms where the students have been prepared for the instruction and where follow-up discussions are held.

Under the aegis of the National Education Association and the U. S. Office of Education, the leading education associations in the country have made formal application to the Federal Communications Commission for the reservation of a certain number of television channels for educational purposes only. Today, nearly every regional and national meeting of educators has the subject of television prominent on its program for panel discussion. Awareness of the importance of the medium has grown rapidly within the past two years.

All of which should be heartening to anyone who has greater hopes for television than that it develop into one long vaudeville-and-sports show. Pleasant as vaudeville and sports may be, it's healthy to season them with a little education sometime. You'll pardon us, though, if we don't use that word on the Hopkins Science Review!

A. Aubrey Bodine, courtesy of Baltimore Sun

MYSTERIOUS CHESAPEAKE

Men who earn their living from the Chesapeake Bay have never had an easy time of it. The winds, the rains, the tides are tough enough. But when unseen forces in the water begin to work against them, too, their jobs become difficult indeed.

MYSTERIOUS CHESAPEAKE

CONTINUED

Johns Hopkins scientists are trying to solve riddles of the Bay which have baffled men for centuries.

THERE WAS A TIME when all that seemed to matter about the Chesapeake was that it was the second biggest bay in the world (a fact of some importance to geography pupils coping with their final exams), that it produced some of the tastiest crabs, fish, and oysters you could find anywhere (a point reassuring to fishermen and epicures and taken for granted by most of them), and that it was about the country's finest sporting ground for sailboat enthusiasts.

Today, though, it is important that men know more about the Bay than just these things. The Bay is big business. It directly affects the livelihood of thousands of persons: the men who fish, and to whom a good catch means the difference between prosperity and the dole. Indirectly, it touches millions more: transport men and processors; market men in a dozen cities; housewives hundreds of miles away.

Economically, socially, biologically, the Bay looms big.

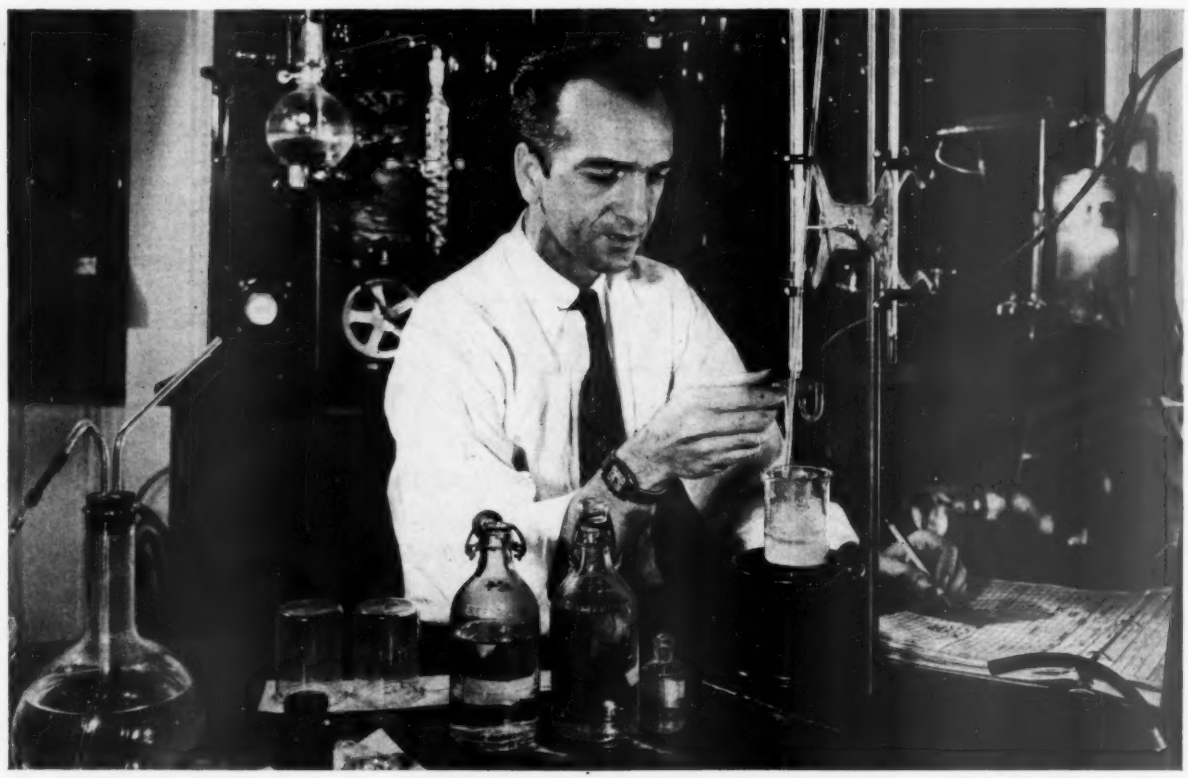
But the Bay itself is indifferent about its responsibilities. It is always eccentric, often frivolous, usually unpredictable. It thinks nothing of killing thousands of oysters in a season and leaving them to rot in its silt and slime. Just as casually, its currents may wash away to sea much of a whole year's crab crop.

It tells no one of these acts; men learn of them only after they reach the fishing grounds and find the pickings slim. They face the loss of their investments and their incomes and they curse the Bay—helplessly, because they know the Bay will very likely kick them again another year.

"If only there were some way we could have *known* things would be bad this year," the bay men say. "We might have been able to adjust our employment; we needn't have outfitted so many ships.

"Next year, things may be just the other way around. A bumper crop. Too much for the normal crews to handle. If that happens, we'll be caught short again: unable to do the business we could do if we were prepared for it."

Everybody agrees that's true. If some-



IN THIS LAB, HOPKINS SCIENTISTS TEST WATER SAMPLES FROM 126 POINTS IN THE BAY.

how the state of marine life in the Bay could be forecast, the Bay's economy could be adjusted to it and avoid the violent ups and downs, the year-to-year fluctuations, which make the bay men's lot a hazardous one indeed.

How to make such predictions is quite another matter. The states of Maryland and Virginia, whose citizens are most vitally concerned with bay productivity, recognize the need; but they know also that one can't make accurate forecasts without knowing first a prodigious lot about the subject the forecasts are concerned with. In this case, the Bay is a mystery. It has baffled men for centuries. Until the mystery is solved, there is little hope of doing more about forecasts than wishing for them.

Forecasts aren't the only solution to the bay problem. If marine life is being killed or chased away by inhospitable conditions in the Bay, forecasts alone won't be much help; something must be done about the conditions themselves. But just what are they? Again, knowledge is the missing and much-needed thing.

Supplying the knowledge is a job set up for itself by a handful of scientists in a new division at Johns Hopkins, the Chesapeake Bay Institute. In the half year since its founding, the institute has already come a long way toward breaking the riddles of the Bay; in the years ahead it has hopes of arming Virginia and Maryland with enough facts about the Bay to enable them to set up a full-fledged system of marine-life forecasting and, perhaps, actually control some of the detrimental conditions which now make bay life the uncertain thing that it is.

NO LANDLOCKED laboratory could reproduce the conditions with which the institute's scientists are concerned. To do their work, they must go to the Bay itself.

For that purpose the institute has what are literally floating laboratories —ships fitted with complex oceanographic apparatus, equipment for on-the-spot analyses, and quarters for the scientists and crews. Their base is a farm on the shore of a Chesapeake tributary near Annapolis, where there are dock facilities and more labs.

The heart of the institute's work takes place at 126 checkpoints in the Bay—carefully charted spots scattered strategically from the Susquehanna River to the Atlantic Ocean. Each month scientists from the institute, aboard their floating laboratories, visit every checkpoint and subject it to as searching an examination as modern equipment and inquisitive minds can devise.

Weber, JHU Illustration

SPECIALLY DESIGNED for research work in the Chesapeake, the *Maury* (above) was launched early this year for the Chesapeake Bay Institute. It is literally a floating laboratory.

One of their instruments, the bathythermograph, takes the water's temperature from the surface to the bottom. A cylindrical object with fins, the bathythermograph contains a stylus, so designed that it is activated by the temperature of the water. As it is lowered to the bottom of the Bay, it passes through varying temperatures of water; and in response it moves, etching a profile of the temperature on a smoked-glass slide. From the scratchings, the scientists can determine how cold it is at any depth; they can spot changes in temperature far below the water's surface.

What is the water like? Another series of devices gathers samples of it so the scientists can see. These are Nansen Bottles, ingeniously designed tubes which may be lowered to any depth from which samples are desired and then, by means of a tripping mechanism, be made to obtain a quantity of water at that point.

The water gathered by the Nansen Bottles goes immediately into the floating lab for thorough analysis. Its turbidity—the amount of sediment it contains, which affects its ability to transmit life-supporting sunlight to fish and plants—is carefully determined. Its acidity or alkalinity is measured by another instrument; if acidity or alkalinity changes too greatly, marine life cannot survive; it is also a clue to pollution in the water. And so on. By the time the tests are completed, and additional ones made back on land, little about the water's makeup at that checkpoint remains a mystery.

Put together, the information

NANSEN BOTTLES are lowered into water by Institute Director Donald Pritchard. At desired depths, a tripping mechanism closes the bottles, obtaining a sample of water which scientists will analyze.

WAYNE BURT prepares to take Bay's temperature. As this instrument, a bathythermograph, is lowered to bottom of the Bay, a stylus is activated by the temperature of the water and cuts a record of it on the slide which Burt is inserting.

gathered at each station gives the institute scientists virtually an x-ray picture of the water conditions there. Combined with data from the other checkpoints, gathered within a relatively short time of one another, it furnishes a full picture of the Bay as a whole. And checked against results from previous months, it shows the changes that have taken place beneath the water—changes that may vitally affect fish, crabs, oysters, and the food they depend upon for life.

The studies which the Chesapeake is undergoing today—and many agencies are hard at work on various aspects of the bay problem—are the most extensive in its history. They involve private and governmental agencies, approaching the bay mystery from many angles.

The hoped-for result is a body of information that has never existed before, on the basis of which governments may develop policies and controls which might help revive the dying marine-life potential of the Bay.

A great deal—the interests of thousands of citizens—depends upon the attainment of that result.

AS SOON AS water samples are hauled aboard boat, they are analyzed. Test above shows how much sediment is in water at various depths. Such sediment reduces ability of water to transmit life-supporting sunlight to fish and plants in Bay.

ANOTHER IMPORTANT TEST is pH analysis (above), which determines acidity or alkalinity of water. If acidity or alkalinity changes too greatly, marine life cannot survive. This test also gives an indication of pollution in water.

LAND HEADQUARTERS for Chesapeake Bay Institute are in this handsome old farmhouse near Annapolis. Recently a new 62-foot boat replaced one in picture (see Page 19).

Carrying on studies of the conditions affecting marine life is not the only job of the Chesapeake Bay Institute. In cooperation with the U. S. Navy, the institute is establishing a training program for oceanographers which, by the very nature of the Bay itself, is possible nowhere else in the world.

The Bay is a remarkable body of water from the oceanographer's standpoint. It furnishes some of the finest examples anywhere of underwater physical conditions in inland waterways. Somewhere in its vast expanse is likely to be found nearly every physical characteristic which an oceanographer will encounter elsewhere; thus, as a training ground, the Bay is unexcelled, and the Chesapeake Institute's work is expected to furnish a firm pattern for other estuarial studies to be undertaken in the future.

Oceanography is a science requiring strange tools: bottles which automatically and simultaneously will gather water samples at ten-foot intervals from the surface of the water to the bottom (see picture, Page 19); delicate instruments which will sketch a profile of water temperature from the surface to the floor. As part of its work, the Chesapeake Institute is developing new instruments, some of which will make their records electronically, which will in many ways revolutionize the oceanographer's art.

The Bay is an oceanographer's paradise.

Photos by Blakeslee-Lane

HE DIDN'T MEAN PLUMBERS

Dr. John Whitehead is an engineer in the best meaning of the term. He saw to it that engineering at Johns Hopkins developed on a high plane, too.

PUZZLED by the results of an experiment, a graduate engineering student at Johns Hopkins had gone to Dean Whitehead to find an explanation for the baffling behavior of his test setup. They were deep in discussion when a secretary entered the office to announce that President Bowman was telephoning the dean. The young student was setting back to wait when he heard Dr. Whitehead saying, "Tell him I'm busy now and will have to call him back." There were no more interruptions until the young man left, after half an hour, with his problem solved.

Later the student asked Dr. Whitehead why he had not taken President Bowman's call. The dean seemed surprised at the question. "The university, the faculty, all of us are here for one purpose—so that young men may be educated." All else was subordinate.

Those who know John Boswell Whitehead will find nothing remarkable in this incident. For him, teaching and research have always had top priority. Only by giving them such precedence could the "daddy of Hopkins' Engineering School" have built the School so swiftly that just twenty years after its founding it was rated among the leaders in the country.

Dr. Whitehead has been virtual leader of the School since it was first conceived. He determined the initial faculty and curriculum, was successively chairman, dean, and director, now is professor emeritus. Yet he has never allowed his administrative duties to interfere with his interests as a research man. He invented electrical instruments, revised the entire theory of dielectrics, and turned out four books and over one hundred articles. Still there was time for consulting work, music boards, and twenty-six years as a vestryman in St. David's Episcopal Church.

Eight years ago, on reaching seventy, he tried to retire. Several months later the University asked him to direct a new research project. It had two features of particular interest: first, it was in the field of high-frequency dielectric heating, quite different from the low-frequency insulation with which Dr. Whitehead had always worked; and second, it involved problems which had long been considered insoluble.

Not bothered at all, the lively septuagenarian returned to his laboratory. He forgot that the problem was impossible and with his phenomenal memory started back at the fundamentals he had learned in his student days. He not only learned the new medium and completed the specific research required; he also developed a number of new techniques which are benefiting all research in high-frequency dielectrics.

Dr. Whitehead doesn't think about retiring any more. A slim, alert man with eager eyes, he asserts that he has "a few of the disabilities of old age, but I try to forget them." His only real trouble is with his stomach, which has been acting up for years. Students bitterly regretted the day when the tea which graced afternoon seminars had to be replaced with a half pint of milk, brought regularly at eleven and four by the janitor.

Two months ago he was laid up several weeks with stomach trouble, and there was worried shaking of heads in the school: "The doctor has got to slow down. He shouldn't do so much at his age." Then one day the doctor phoned for some books and one of the professors took them over to his apartment. Clad in pajamas, Dr. Whitehead opened the door himself and conducted the business with, if anything, more vigor than usual. Surprised at this activity, the professor asked Dr. Whitehead what he was doing. "Why," he said, "I'm writing another paper." Within a few days he was back in Maryland Hall, readying the article for publication.

DR. WHITEHEAD has always been a tireless worker, starting early in the morning and often staying in his laboratory long after his associates were home at dinner. Relieved now of classes, he tremendously enjoys the new luxury of rising late, having a leisurely breakfast, and coming in to his office around 10:30.

But his thinking has not been restricted to any shorter hours than in the old days. His students tell of times when they would be stuck on an experiment and, baffled, stop Dr. Whitehead on his way home to tell him their troubles. The next morning a familiar step would be heard coming down the corridor; Dr. Whitehead would round the corner and say, "I was thinking about that little problem last night while I was lying in bed. I believe that if you will examine your connections again you will find . . ." He had always deduced the cause of the trouble and he usually had a solution ready.

At times his passion for research ran,

in his students' opinion, to extremes. Young graduates studying for Doctor of Engineering degrees would spend a couple of years working out data for their dissertations. Then they outlined their discoveries to the attentive dean and asked permission to apply for the degree.

"My boy," Dr. Whitehead was shocked, "you're not going to stop now! Look what this suggests. Surely you can't leave the work with so many problems unsolved!"

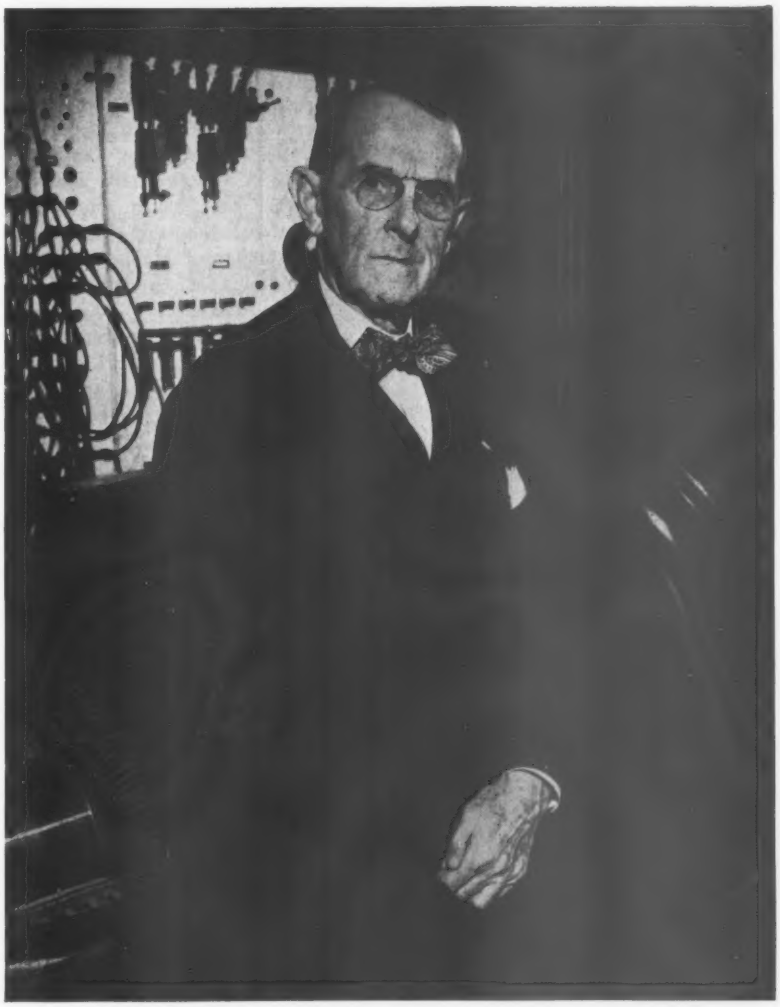
Back the student would go for more experiments which, when completed, only turned up more mysteries and the same reactions from Dr. Whitehead. Finally the students worked out a system of writing down exactly what they had to do and then confronting him with this list when they had completed the assignments. The problems being endless, they otherwise could have spent their lives working for a single degree.

HIS PURSUIT of the unknown started early in his relations with Hopkins. John Whitehead was born in Norfolk in 1872 of a family which had been prominent in Virginia since the first ancestors landed there in 1640. When seventeen he came to Baltimore and, following the lead of an admired cousin, enrolled for a history-political science curriculum. Because of language requirements which he passed in his entrance exams, he did not have to take freshman German and found that he had one course free. By chance, the only subject which fitted into his schedule was Physics I.

These were the days when Rowland was at his peak, when Duncan and Ames were leading laboratory classes. Young Whitehead was fascinated by what he saw, by all of the problems waiting to be understood and solved. Within a year he had changed his curriculum and in 1893 he received not the B.A. but a degree in applied electricity.

After graduation he joined the Westinghouse Electric and Manufacturing Company, which was then making generators and transformers to be placed at Niagara Falls. After one year in the shops and two in experimental development, he went to Niagara and spent a year there during the first operation of the great new plant.

In 1897 Jack Whitehead returned to Hopkins and, despite many business offers, he has not left it again. His advance was rapid and the years characteristically full. First an instructor in applied electricity, then an associate, in seven years he had risen to associate professor. Meanwhile he had taken a B.A., a Ph.D., done research work for the Bureau of Standards and the Carnegie Institution of Washington, and married Mary Ellen Colston of Baltimore.



Blakeslee-Lane

DR. JOHN B. WHITEHEAD led drive to establish School of Engineering at Hopkins. Teacher, dean, research man, he has guided School nearly forty years.

A great organizer, he early founded the Baltimore section of the American Institute of Electrical Engineers, of which he was chairman until, two decades later, he moved up to the national board and presidency of the institute. On Sundays he was, by his own admission, "an insignificant member" of a church choir; later he instructed a Sunday school class although he was teaching six days a week at Hopkins.

Made a full professor in 1910, he was already doing a great deal of consulting work. The most vital to Hopkins was as a consultant on the Homewood campus project, then getting under way. He kept a close eye on the construction, making sure that all was done perfectly.

When William B. Kouwenhoven first joined Dr. Whitehead, he was sent out every morning to check on the work. Knowing Dr. Whitehead as a completely fair man but a demanding one, Kouwenhoven took his duties very seriously. "One day," he says, "I remember quite clearly." Checking on the wiring, he felt that the leads were not being insulated correctly and ordered the work stopped.

By the time he got downtown, Dr. Whitehead was raging. Why had he stopped the work? Where did he get the authority? Dr. Whitehead had been shown samples which were perfectly satisfactory.

Still depressed the next morning,

young Kouwenhoven was wondering how he could vindicate himself. Suddenly the door opened and Dr. Whitehead said abruptly, "W. B., you were quite right. It's a rotten job."

DURING this same time, Dr. Whitehead was doing what is probably his most important work: fighting for the establishment of a school of engineering at Hopkins. The fight was not easy, because many scholars suspected that he wanted a trade school, completely out of keeping with the spirit of the University. "They thought I meant plumbers," comments the doctor.

From the beginning Dr. Whitehead insisted that the School have two things: an undergraduate curriculum in practical and theoretical engineering at the university level, and a graduate center for broad research. "I knew we had to start the School on a high level or it would never amount to anything."

The School began on a shoestring. Much of its initial cost was financed by the State of Maryland. In drawing up the courses, Dr. Whitehead insisted that they deal mainly with fundamentals. Only five per cent of the information the men learn, he used to say, will they ever use again anyhow. Let them learn the fundamentals and then they will be prepared for any problem.

Graduates of the Engineering School believe that their preparation is not surpassed by that in any other university, and they lay the credit chiefly to this emphasis on fundamentals. Dr. Whitehead teaches scientific "laws" as "conclusions based upon what we now know."

At a recent physics convention, Whitehead alumni (as they term themselves) listened carefully to a physicist discourse on principles they had learned from Dr. Whitehead years before. When asked why they were so attentive to facts they already knew, one answered, "We never know when we will come across a new fact which will make us change the so-called laws that we know."

Dr. Whitehead had equally definite ideas about graduate study. The faculty he chose was composed of teachers who were also avid research men, and the Department of Engineering, which opened in 1912, included one of the few programs for graduate engineering study which existed in the United States prior to 1918.

Dr. Whitehead was doing a great deal of research himself in those early years. His invention of the Corona voltmeter, a high-voltage measuring device, he brushes aside: "too expensive; nobody could afford to use it." He had just won his first important award, the Longstreth Medal from the Franklin Institute in 1917, when the United States entered the war. Joining the Corps of Engineers, Major Whitehead moved to Annapolis to work on methods of submarine detection.

When he returned to Hopkins he found things sadly changed. Latrobe and Maryland Halls had been made barracks for the Army's college trainees, the court had been torn up by parade drills, and Machinery Hall had been demoted to a messhall. (Dr. Christie, a veteran of the siege, recalls wryly, "We had three-inch bugs in Machinery Hall for ten years after that!")

But the important damage had been in the total depletion of the graduate staff. Virtually all of the young graduates had disappeared into the services. Dr. Whitehead had to build his graduate school all over again, and now there were many more competitors.

The name, School of Engineering, was formally adopted in 1919, and Dr. Whitehead was named dean. In the enlarging School, this position grew more complex during the years that followed.

Reporters badgered him for comments on the effectiveness of lightning rods and the possibility of constructing a mechanical man who could fry eggs. A special Whitehead touch was the supply of linen towels in the engineering buildings. He bought toweling and made an arrangement with the janitor's wife to hem the towels and keep them laundered.

DR. WHITEHEAD continued to teach. Although he is the most understanding and helpful of men, his students generally started off being afraid of him. First, he was a famous man and his reputation awed them. Second, he made them work—and hard! "He's a tartar," they said. Now they add, "He had to be."

No gentleman was ever allowed to attend his classes in shirtsleeves. Always prompt himself, he had a special method of dealing with late students. As they opened the door he would stop speaking. Then, silent, he eyed them as they scuttled past the lectern to their seats. Not until they were seated with pencils ready did he start the lecture again. Few men were ever late twice to Dr. Whitehead's class.

And apparently, only one man ever went to sleep in his class. That man was awakened and told to leave the class until he could stay awake. The student didn't stop to argue, but later he came to Dr. Whitehead to explain. To make a little money, he worked at night repairing radios. He had cut all his classes that morning, waking just in time to get to Dr. Whitehead's. Unfortunately, he apologized, he had fallen asleep again.

Dr. Whitehead answered without a trace of anger. "Sleeping in that chair is uncomfortable for you and you would be much better off at home in bed. Besides, it is most disconcerting for me. So I repeat, don't come to class until you can stay awake."

Never one to tolerate parroting, he often gave his examination questions a month ahead of time so that the students could do ample independent study. The questions frequently were on engineering problems which had not been solved. Dr. Whitehead always was looking for the best minds in his classes, and tried to lead these men into graduate work.

HE PROBABLY has done research on less money than any other man at Hopkins. When he told students to build an instrument, he never thought of where they might get the equipment and was highly indignant if they put in a requisition. For him, they literally begged, borrowed, and stole.

Building one instrument, a young graduate managed to scrape together lumber, wiring, asbestos, everything but a vital blower. He told a mechanic in Machinery Hall of his desperate straits, and the mechanic promised to see what he could do without bothering Dr. Whitehead. The next morning, the instrument had a blower.

Nearly five years passed before a superintendent of buildings, walking through the hall, happened to spot the instrument. He leaped on the blower and howled, "Where did you get this thing? It's been missing from the School of Hygiene for years!"

During the twenties and thirties, Dr. Whitehead's laboratory became a world center for dielectric research. He was given awards, asked to make lecture tours, interviewed for opinions. Yet it was typical that in his teaching he almost never referred to his own work.

Directness, possible because of his extraordinary memory and concentra-

tion, has always been the outstanding characteristic of his research. When he conducts an experiment, he knows almost exactly what the results will be, never losing himself in a welter of data which must later be assimilated and understood.

At journal meetings, where faculty and graduates read reviews of research in other institutions, any vague summaries of theories have been suddenly halted by a loud pounding on the table and an intense voice questioning, "What difference does it make what the man thinks? What did he do? Where is his evidence?"

His memory at times has been disconcerting to his associates. He never would allow anything to be thrown away, even if it was years before he found a use for it. In 1926 he went down to the mechanics' office and asked, "What happened to that wiring we used on the Annapolis job in 1915?"

DURING 1926 and 1927, Dr. Whitehead was in France as exchange professor of engineering lecturing at ten universities. He received the Médaille de l'Université at Nancy, and enjoyed the wild celebrating in Paris the day that Lindbergh landed.

Returning to Hopkins, he became more heavily involved in research and consultation than ever. He worked with city and state, led the fight to make the Pennsylvania Railroad run its electric cables underground, was called as an expert witness to inspect the Hindenburg explosion.

In 1938 Dr. Kouwenhoven was made dean of the School and Dr. Whitehead became director. He helped map out the war research in the Engineering School and acted as consultant for the Navy, besides directing the high-frequency dielectric research.

In 1942 he even accepted an appointment to a Board of Municipal Music, set up by the city, to straighten out union and political disputes which were jeopardizing Baltimore's symphony orchestra.

It was in 1948 that a new engineering building at Hopkins was named, as his students had long urged, for Dr. Whitehead. The singular honor both pleased and embarrassed the doctor, who suggested at first that he might have to be out of town when it was dedicated.

The day of the dedication was beautiful, and Dr. Whitehead sat quietly enjoying the Maryland sunshine while the speakers heaped praise on him. When it was his turn to speak, he talked very briefly. He explained that he had been confused about what to say because there seemed to be no precedent for his position. Usually the man honored was dead.

But then he had remembered Koko in *The Mikado*. Koko cheerfully admitted that he had reached his high state through luck and politics. Instead of being embarrassed by his position, he enjoyed his lot and liked to bask in the admiration of his countrymen.

"I have been told," said Dr. Whitehead, "by certain friends and some enemies, that I am now something of a basker myself." With no further words, he sat down.

Honors have come in abundance. He has received six important medals, topped by the Edison Medal in 1941 which acclaimed him for his pioneering, developments, and achievements in the field of electrical engineering. He was elected to the National Academy of Sciences, was called in 1934 Baltimore's outstanding man of science by the Advertising Club, has been member and chairman of numerous boards and societies.

But Dr. Whitehead's real monuments are three: the Hopkins School of Engineering, the field of dielectrics which he so profoundly influenced, and the alumni of his school and laboratory who are now leaders of electrical engineering.

NOT OFTEN is a university building named for a living man. But when a new engineering building was proposed at Johns Hopkins, the name "Whitehead Hall" was the obvious choice, even though the "daddy of the Engineering School" was still active in his research work.

NEWS at Johns Hopkins

A digest of developments at the University and Hospital since the first of the year

THE UNIVERSITY passed its seventy-fourth anniversary a month ago looking healthier than at any time since the war—and with its face turned to the future.

Its undergraduate body, though still swollen with veterans studying under the G. I. Bill, was returning to a trimmer size. The graduate departments were active in a vast number of significant projects. On the medical side, there were new discoveries, new buildings, and a new administrative set-up (see Page 6).

At Homewood the foundations were in place for a new wing on the biology building to house the new Department of Biophysics, and construction, helped along by a mild winter, was moving rapidly. Preliminary plans were complete for Shriver Hall, the million-dollar lecture building for which funds were received many years ago. There was similar activity at the Hospital, where a new radiology laboratory was nearing completion.

Hopkins scholars were active in many fields and at many places. On the Chesapeake Bay, University oceanographers were gathering information about underwater conditions which is expected to play an important part in the efforts to rebuild the economic security of that region (see Page 17). In the new McCollum-Pratt Institute at Homewood, important research was being conducted in trace elements, elements of which tiny quantities are present in growing things and which play a vital role in the well-being of human and other life.

At the University's closely guarded Applied Physics Laboratory at Silver Spring, Maryland, scientists were exploring outer space with high-flying rockets and developing new knowledge about ram-jet engines. Psychologists at Homewood were studying how to design machines which are more in harmony with the mental processes of man than they have been in the past. The head of the University's Oriental Seminary was leading an archaeological expedition through Egypt and Saudi Arabia under armed convoys, employing such spanking new developments as radioactivity studies to learn about centuries-old civilizations.

Medical researchers felt they were on the verge of significant new things, too. Those at Hopkins were taking important parts in the investigations into ACTH, in the studies of cancer and sclerosis and heart disease and dozens of other ills. One group announced that it had finally succeeded in isolating a virus which seemed capable of transmitting the common cold (see below).

As it entered its seventy-fifth year, Johns Hopkins gave evidence that it was continuing the sort of work which had distinguished the University from the start.

Commemoration Day

Commemoration Day, 1950, marking the anniversary of the inauguration of the University's first president, brought the British Ambassador to the United States, Sir Oliver Franks, to Johns Hopkins for the presentation to him of the honorary degree of Doctor of Laws. He delivered the principal address at the commemoration exercises, the George Huntington Williams Memorial Lecture, comparing the international policies of his country and the United States. Great Britain, he said, tends to build its policy on the basis of the continuity of history; America, on the basis of what the future seems to hold. But for all their differences, Sir Oliver emphasized, the two policies are designed to reach a common goal: prosperity and freedom for the world.

The Cold Virus

Working with human volunteers, two Hopkins doctors have succeeded in isolating and transmitting a virus capable of producing the common cold. In 1947 a cold virus had been found after research at the National Institute of Health, but last summer it disappeared.

At the Hopkins School of Hygiene, Dr. Thomas G. Ward, assistant professor of bacteriology, and Dr. Donald F. Proctor, associate professor of laryngology and otology, made dozens of tests with specimens taken from cold sufferers. They finally succeeded in transmitting the virus through five sets of chick embryos.

Prisoners at the Maryland State Reformatory for Males volunteered to

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AT COMMEMORATION DAY EXERCISES on the University's 74th Anniversary, Sir Oliver Franks (right), British ambassador to the United States, received an honorary Doctor of Laws degree. Delivering the Williams lecture, Sir Oliver compared U. S. and British foreign policy. President Detlev W. Bronk is at the left.

act as subjects for the experiments. The men were isolated for five days and then inoculated. Half of them received the cold virus and half a sterile control solution. Within five more days, fourteen of the twenty-three who had received the virus showed definite cold symptoms. All of those who had received the sterile solution were in good health.

Dr. Ward and Dr. Proctor warn that this is only the beginning in the search for a cold cure. Many questions still must be answered. Are there different types of cold virus? Does man develop an immunity against colds—and if so how long will it last? Can an effective vaccine be found to combat the disease?

How soon these questions will be answered no man can say with certainty. Isolation of the virus, however, finally provides research men with a concrete enemy to fight against.

Sports

The University's physical education organization was going through a period of spring changes. It started with the resignation of Howard (Howdy) Myers, Jr., who had earned a place for himself as one of the University's all-time top football and lacrosse coaches, to accept a position as director of athletics at Hofstra College, Long Island.

To fill the empty lacrosse position, Dr. W. Kelso Morrill, associate professor of mathematics and former coach of championship Hopkins lacrosse teams, agreed to serve for one season. Marshall S. Turner, Jr., formerly head of freshman athletics, took over active management of the physical education department as assistant to Chairman William Logan.

And Clyde Huether, formerly tennis coach, moved into the coaching spot on the track team left vacant by the resignation of George Wackenhut to become civilian adviser to the Army sports branch.

The lacrosse calendar this spring:

APRIL 1: Loyola, away.
APRIL 15: Virginia, home.
APRIL 22: Princeton, away.
APRIL 29: Army, away.
MAY 6: Duke, home.
MAY 13: Navy, away.
MAY 20: Maryland, home.
Mt. Washington date and location to be announced.

TV Contest

Hopkins' second annual contest for original television plays, open to any writer in the United States, is now under way. The winner will receive the Victor Frenkil Prize of $150. It is expected that the winning play will be produced by the Johns Hopkins Playshop and televised over station WMAR-TV next fall.

Subjects are unlimited, and plays may run from thirty to fifty minutes of television time. All entries must be original scripts, never before produced on television or radio. The contest closes July 1. Inquiries for further details should be addressed to the Department of Writing, Speech, and Drama at the University.

The Faculty

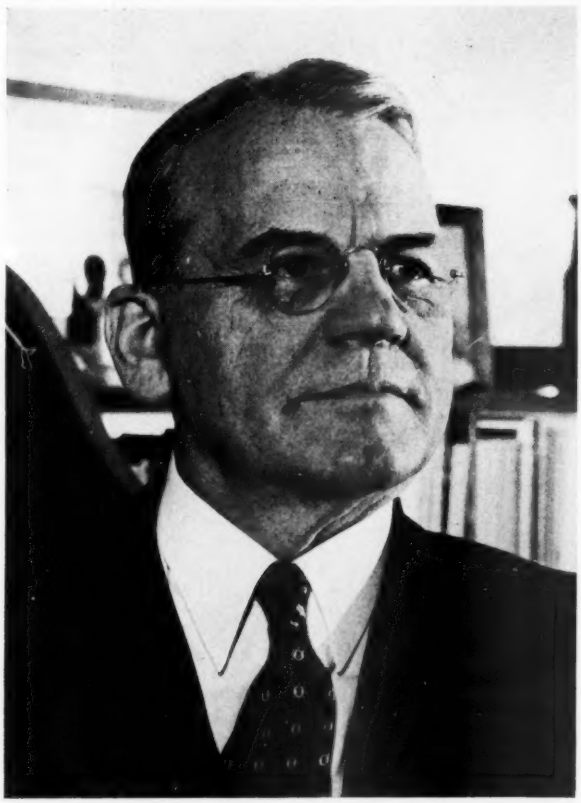
● *In the Faculty of Philosophy,* Dr. Clarence Ward has been appointed visiting professor of art for the first term 1950–51. Dr. Richard H. Howland has been granted a leave of absence for this period, and Dr. Ward will be acting chairman of the department.

Dr. William D. McElroy, associate professor of biology, has been invited to attend the symposium, *Mecanisme de la Narcose,* to be held in Paris this month.

Dr. Sidney P. Colowick has been appointed associate professor of biology with the McCollum-Pratt Institute at Homewood.

Prof. Henry T. Rowell, chairman of the classics department, has been granted leave of absence for the fall term of 1950–51; he will be at Harvard. Prof. James H. Oliver will be acting chairman of the department during this period.

Prof. Robert L. Pendleton, of geography, is taking a one-year leave of absence to work in Siam. He will return in February, 1951.



ISAIAH BOWMAN

ISAIAH BOWMAN, the fifth president of this University, died suddenly in Baltimore on January 6, 1950, in his seventy-second year. For over thirteen years, ending twelve months ago, he directed the affairs of the University with high distinction, ever upholding the ideals of its founders for scholarship and service. During the depression of the thirties, and again during the Second World War when the very existence of privately supported institutions of learning was threatened, Dr. Bowman labored unceasingly to solve problems of administration and finance as they arose, and on his retirement saw the University on firm ground, with ever widening influence and prestige.

Geography was Dr. Bowman's chosen field of scholarship. While still a post-graduate student at Yale, he led that university's first South American Exploration Expedition. After leading two further expeditions, he was made the director of the American Geographical Society, a post which he held for twenty years until he came to Johns Hopkins.

In due course, he became one of the foremost authorities on political geography and was said to have been one of the most efficient coordinators of topography, population pressures, and economic resources that the world has known. During his administration this University established for the first time a department of geography, which now bears his name.

Dr. Bowman gained international recognition thirty years ago when President Wilson selected him to be a member of the American delegation which negotiated the Treaty of Versailles. During the last war, President Roosevelt called on him for advice and asked him to participate in the post-war conferences at Dumbarton Oaks and San Francisco that led to the creation of the United Nations.

In the field of education, Dr. Bowman's insight and vigor gave him a position of preeminence among university presidents, and so brought renown to this University. The medals, honors, and degrees bestowed upon him by societies and institutions of learning in this country and abroad are too numerous to record. At his death he was an elected overseer of his alma mater, Harvard, and was due to receive in the coming week the Gold Medal of the Explorers Club.

At Johns Hopkins, in spite of limited funds, he greatly strengthened the various faculties, attracting and retaining scholars of the first rank. This University again records, as it did at the time of his retirement from office, its gratitude for his loyal and devoted service.

We of this board have admired Isaiah Bowman for his wide scholarship, his able administration, and his wise counsel. But other qualities, his simple directness, his loyalty, and his personal charm, have turned our admiration to affection. The nation, the state, and this community have lost a leading citizen and a great man. Each of us has lost a close personal friend.

Thus did the University's Board of Trustees, on January 9, 1950, record the University's sorrow at the death of its fifth president.

Col. Delphin E. Thebaud, who retired in December as professor of military science and tactics, recently received the Second Army Certificate of Achievement for organizing and administering the Hopkins ROTC. A silver cup was presented to him by the Scabbard and Blade, the Arnold Society, and the Society of American Engineers, of the Hopkins ROTC unit.

Prof. William F. Albright, chairman of Oriental Seminary, will be in Egypt and Arabia until May on an archaeological expedition. During his absence Dr. Carleton Hodge and the Rev. Patrick Skehan have been visiting lecturers at the University, and Prof. Frank R. Blake has been acting chairman of the department.

Prof. George Boas has asked to be relieved of the chairmanship of the philosophy department, effective June 30. Associate Professor Victor Lowe will take over the chairmanship.

Dr. H. Carrington Lancaster, James M. Beall Professor of French Literature, will return in May from a four-month lecture series given at educational institutions in the South. Madame Jeanne Durry is visiting professor of Romance languages during this period.

Karl Shapiro, associate professor of writing, speech, and drama, has resigned as of July 1 to become editor of *Poetry* magazine.

● *At the School of Medicine*, Dr. Barnett Cohen, associate professor of physiological chemistry, has been elected president of the Society of American Bacteriologists for 1950.

Dr. Gilbert J. Vosburgh, assistant professor of obstetrics, has resigned effective July 1 to become professor of obstetrics and gynecology at Western Reserve University.

Dr. Alfred Blalock, professor of surgery, director of the department of surgery, and surgeon-in-chief of the Hospital, was recently given the Rudolph Matas award at Tulane "for conspicuous achievements in advancing the progress of vascular surgery." Earlier he had been named the world's outstanding vascular surgeon by the International Society of Surgeons and had been presented the Prix René Lériche award.

● *At the School of Hygiene and Public Health*, Dr. Herbert Notkin, recently named assistant chief of the Bureau of Medical Services, Maryland State Department of Health, has been appointed lecturer in public health administration.

Dr. William W. Cort, professor of parasitology, and Dr. Kenneth F. Maxcy, professor of epidemiology, have been appointed special consultants to the Communicable Disease Center, U. S. Public Health Service.

● *At the Hospital*, Dr. W. Arthur Purdum, chief pharmacist, has been named recipient of the first Harvey A. K. Whitney Lecture Award, to be presented annually to the person who has contributed most to hospital pharmacy.

● *In the School of Engineering*, Dr. William H. Hoppman, 2d, has been promoted from assistant professor of mechanical engineering to associate professor in the department.

Dr. Leslie S. G. Kovasznay, formerly assistant professor of aeronautics, has been made associate professor.

● *At the Applied Physics Laboratory*, Dr. James A. Van Allen, research physicist, was awarded the C. N. Hickman silver medal of the American Rocket Society for his work on the Aerobee rocket (see picture, Page 5) and the upper atmosphere.

Roger K. Higgins has been appointed engineer in the telemetering group and Roland W. Larson engineer in the launching group.

● *At the Institute for Cooperative Research*, Howard Head, design engineer, has joined the staff to work with the projects of Drs. Wise, Strong, Maddin, and Hinman.

Porter Sutton has been appointed administrative officer for the Arctic Research Laboratory, Point Barrow, Alaska. He will devote part of his time to ICR staff duties.

● *President Detlev W. Bronk* has been appointed to the Commission on Financing Higher Education of the Association of American Universities.

● *Among members of the Board of Trustees*, D. Luke Hopkins, vice president of the Board, has been appointed to the four-man security survey panel of the Atomic Energy Commission.

S. Page Nelson was recently elected president of the Baltimore Association of Commerce. He succeeds Charles S. Garland, also a member of the Board, who was named Baltimore's Man of the

JHU Illustrations Division

THIS CHECK FOR $100,592 represents the gifts of Johns Hopkins alumni to the University in the 1949 Roll Call. Presented at the 1950 alumni banquet in Baltimore, it is the largest amount ever given in the annual campaign. Above, left to right, are Dr. J. H. F. Dunning Chairman of the Roll Call; Solicitor General Philip B. Perlman, banquet speaker; and President Bronk.

Year for 1949 by the city's Advertising Club.

New Radiology

At the Hospital, a new building program to provide desperately-needed space has been put into effect and is proceeding rapidly. The first unit, the new Radiology Building, is complete and should be in full operation by the end of the month; plans have been drawn for an addition to the Harriet Lane Home; and it is hoped that demolition to clear space for a new surgical building may be started during the summer.

The Radiology Building stands in the Hospital court immediately west of Halstead Surgical Building. It has been specially planned to provide great facility and speed in the handling of patients.

Limited patient service has been carried on since the last of February, when the first equipment, two units for deep therapy and one for surface treatment, was transferred from old quarters in the Surgical Building. Diagnostic apparatus has had to be moved only one unit at a time so that radiology service would not be seriously interrupted.

A Cardiac Clinic planned for the Harriet Lane Home may be completed in early June.

Books

ALPHONSE CHAPANIS, associate professor of psychology, Wendell R. Garner, assistant professor, and Clifford T. Morgan, professor: *Applied Experimental Psychology.*

WILLIAM G. COCHRAN, professor of biostatistics (and G. M. Cox): *Experimental Designs.*

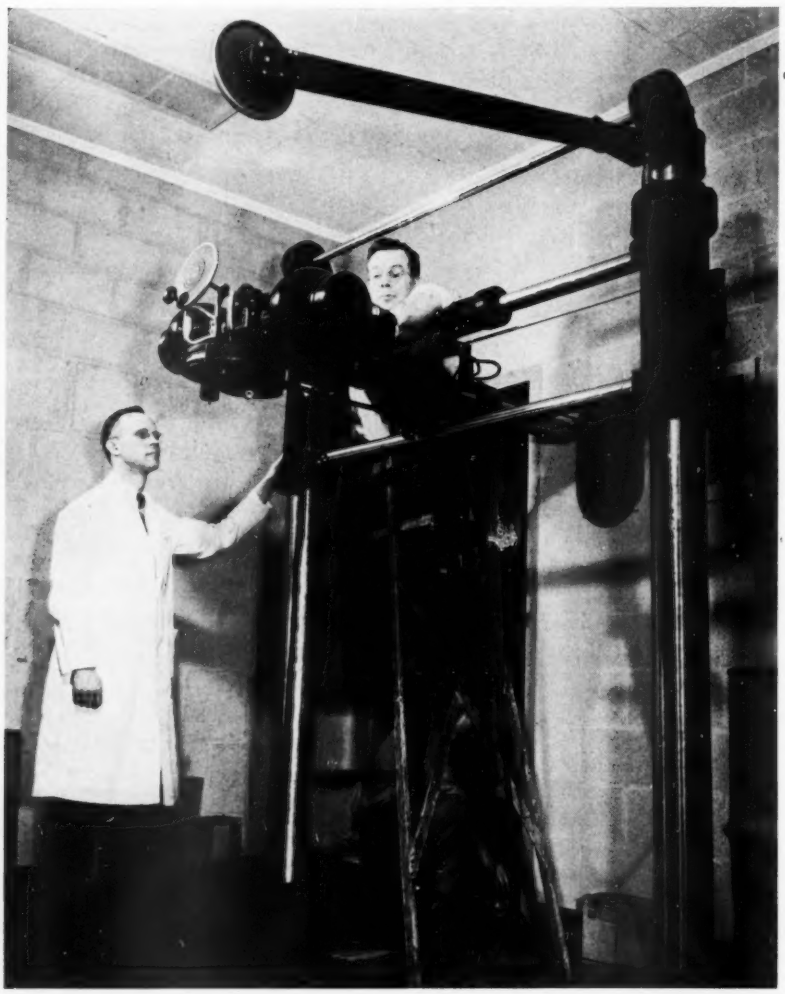
IRA HIRSCHMANN, '19–'20: *The Embers Still Burn.*

H. CARRINGTON LANCASTER, Ph.D. '07, James M. Beall Professor of French Literature: *French Tragedy at the Time of Louis XV and Voltaire, 1715–1774.*

LYNN POOLE, director of public relations: *Science via Television.*

GEORGE BOAS, professor of philosophy: essay in collection, *Philosophic Thought in France and the United States.*

CAROLINE A. CHANDLER, assistant professor of preventive medicine and instructor in pediatrics: *Famous Men of Medicine.*



Blakeslee-Lane

250-KV RADIOLOGY INSTRUMENT for deep therapy is installed in new Radiology Building at the Hospital. The Department should be in full operation this month.

The Alumni

Abraham Flexner, B.A.'86, LL.D.'49, Ernest W. Goodpasture, M.D.'12, fac. '14–'15, and Edwards A. Park, professor emeritus of pediatrics, were among the four men to receive honorary degrees from Washington University, St. Louis, in February.

Herbert P. Houghton, Ph.D. '07, will retire in June as chairman of the department of classical languages of Carleton College, Northfield, Minn.

Frank G. Breyer, '08, M.A. '10, has been elected honorary member of the American Institute of Chemists, honoring him for his applications of chemistry and engineering in industry.

Charles S. Piggot, Ph.D. '20, has been appointed scientific attache at the U. S. Embassy in London. His task will be to improve cooperation among the American and British governments and scientists.

John L. Stearns, '20, has been elected vice president of the New England Mutual Life Insurance Company.

Frederick H. Allen, M.D. '21, fac. '22–'25, has received the $10,000 Philadelphia Award for his work with problem children at the Child Guidance Clinic in Philadelphia.

Fred L. Soper, C.P.H. '23, Dr.P.H. '25, has been awarded the Theobald Smith Gold Medal for his work as director of the Brazilian Yellow Fever Service. The award was made by the American Society of Tropical Medicine, the American Academy of Tropical Medicine, and the National Malaria Society.

Louis H. Naylor, B.A. '17, M.A. '22, Ph.D. '23, Fel. by C. '29–'30, has been promoted to professor of Romance languages at Trinity College, Hartford, Conn.

Before *After*

Dorsey Studios

Blakeslee-Lane

New Approach To Obstetrical Care

A new personalized service, unique in hospital out-patient procedure for low-income persons, has been put into effect in the Obstetrical Out-Patient Department at Johns Hopkins. The changes, only the surface part of which is shown in the "before" and "after" pictures of the O.B. waiting area, above, are expected to make an important difference in the cheerfulness and relaxation of patients during the labor of childbirth itself.

Under the old system, patients were simply assigned a day on which to report for examination. They came early in the day and waited their turn, often for hours, to see whatever doctor happened to be available. They became restless and uneasy during their long waits; and it was mere coincidence if they were treated by the same doctor two visits in a row.

When time for delivery arrived, they were assigned to the Women's Clinic to be cared for by doctors and nurses whom they were meeting for the first time. They were generally less relaxed and cheerful during labor than were private patients who were under the care of doctors they had known throughout their pregnancies.

The new system brings the clinic patients many of the private-care advantages. The new private-waiting-room atmosphere of the department, above, is only part of the change. The clinic patients are now seen by a definite time-of-day appointment, reducing their waiting time to a minimum. They report to the same doctor on each visit. And during labor, delivery of the baby, and post-natal care, the same doctor is in attendance.

The new service, believed to be the first of its kind for dispensary patients, is expected to provide far more comfort and confidence for the patient during childbirth.

It was developed by Dr. John Whitridge, Jr., obstetrician-in-charge of the Out-Patient Department, and Dr. Gilbert J. Vosburgh, staff obstetrician, and approved by Dr. Nicholson J. Eastman, obstetrician-in-chief.

Ralph B. Hogan, M.P.H. '38, has been appointed chief of laboratory services for the Communicable Disease Center, U. S. Public Health Service.

Alumni Meetings

With twenty-three groups spread from the East Coast to the Philippines, John Hopkins alumni today are organized on a wider scale than ever before. Here are some of their coming events:

APRIL 1: President Bronk will address the alumni of Georgia at the Atlanta Athletic Club.

APRIL 5: President Bronk will address the alumni of Illinois at the Furniture Mart Club in Chicago.

APRIL 12: Dr. Lawrence R. Hafstad will address eastern alumni of the Chemistry Department at the Bellevue-Stratford in Philadelphia; cocktails at 6, dinner at 7 p.m.

APRIL 18: Midwestern chemistry alumni will meet at luncheon at the Statler Hotel in Detroit at 12:15 p.m.

MAY 19: The Johns Hopkins Engineers will hold their annual dinner at Levering Hall, Homewood.

MAY 20: Alumni Homecoming at the University. 11 a.m.: tours of the Homewood campus; 12:30 p.m.: luncheon in the gymnasium; 2: parade of classes to reserved seats at Homewood Field; 2:30: lacrosse, Hopkins vs. University of Maryland; 5: open house at fraternities; 6: reunion dinners of undergraduate classes of the years ending in 0 and 5.

On January 12 and 16, respectively, Dr. Bronk spoke at meetings of California alumni at Los Angeles and San Francisco. The alumni of the District of Columbia heard him on February 20, and elected these officers: Judge Milton S. Kronheim, Jr., president; Dr. Ronald A. Cox, vice president; Ferdinand Kaufholz, Jr., secretary; and Dr. Alfred G. Ennis, treasurer.

On February 21, the alumni of Baltimore held their annual banquet and were addressed by the Solicitor General of the United States, Philip B. Perlman. Dr. J. H. F. Dunning, chairman of the annual Alumni Roll Call, presented to Dr. Bronk a check for $100,592, representing proceeds from the Third Roll Call in 1949. The association elected Allan C. Davis president; Dr. Edwin

B. Jarrett, vice president; Jesse Slingluff, Jr., secretary; and Dr. Horace B. Flack, treasurer.

The Johns Hopkins Club of Baltimore held a musicale at Homewood on March 5.

Chemistry alumni were scheduled to hold a cocktail party at the Shamrock Hotel in Houston, Texas, on March 28.

New York alumni were scheduled to hear Dr. Bronk speak at a dinner at the Columbia University Club on the same date.

Deaths

(Dates are 1950, except where otherwise noted.)

Alfred Howard Braecklein, g. '13–'15, January 19.

Carlotta Swett Bunting (Mrs. Charles H.), M.D. '01, December 22, 1949.

Lloyd Griffith Corkran, g. '04–'05, March 20, 1949.

Edwin Charles Cort, M.D. '07, January 10.

Rev. Oliver Wesley DeVenish, B.S. '24, January 22.

Joel Gutman, '14–'16, February 16.

Charles Chauncy W. Judd, M.D. '11, January 19.

Cmdr. Andre E. Lee, M.D. '06, January 23.

David Lovett, B.A. '27, Ph.D. '35, January 22.

Charles Elmer Magoun, '10–'12, December 18, 1944.

Stevens Thomson Mason, '99–'00, January 22.

George R. Minot, fac. '14–'15, February 25.

Arthur H. Morse, M.D. '06, fac. '10–'11, January 26.

Sidney Nirdlinger, Ph.D. '09, July 2, 1944.

Herbert D. Pease, fel. '94, '95, February 14.

Edward Charles Seitz, M.A. '26, April 9, 1949.

Rev. H. Framer Smith, g. '16–'17, January 15, 1949.

Robert Armistead Stewart, fac. '17–'19, January 18.

Samuel Newton Taylor, Fel. by C. '21–'22, January 8.

Frederick Tupper, Ph.D. '93, February 11.

Marjorie H. Urschel, '45–'48, September 23, 1949.

Lewis Butler Whiting, M.D. '34, January 26.

Harold Edson Wright, fac. '23–'40, January 16.

James Watts Young, P.A.E. '94, B. E (ex. ord.) conf. '27, February 1.

JOHNS HOPKINS: 1940-1950

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It may be noted in passing that the University-wide character of the Department of Biophysics, breaking as it does through the barriers which separate schools and departments, is a striking example of a movement which seems to be gaining momentum at Hopkins. Another example may be found in the recent appointment of Dr. Richard H. Shryock as professor of the history of medicine. Dr. Shryock was an eminent American historian in the broadest sense before his special interests led him toward the history of science and then of medicine. He is at home both with the scientists and the historians, and his presence has done much to provide a common meeting ground for the two groups.

Before the war, and in spite of the fact that Dr. Bowman was one of the world's most eminent practitioners, Hopkins had no department of geography. The war revealed all too clearly our national shortage of men soundly trained to understand the world in which we live. We had too few physical geographers, too few experts on soils, climates, populations, and the relations of these to economic life. The shortage of experts in political geography was appalling in view of America's new position in the world.

The Hopkins Department of Geography was organized on a small scale during the war and in succeeding years, as endowment was acquired, additions were made to its staff. Now it is widely recognized as one of the strong departments of the country, and it attracts students from all over the world. Its plan of operation provides another example of academic cooperation. The geographers draw strength from the departments of geology, civil engineering, history, and economics as well as the Walter Hines Page School of International Relations. In turn, they contribute to the programs of these groups.

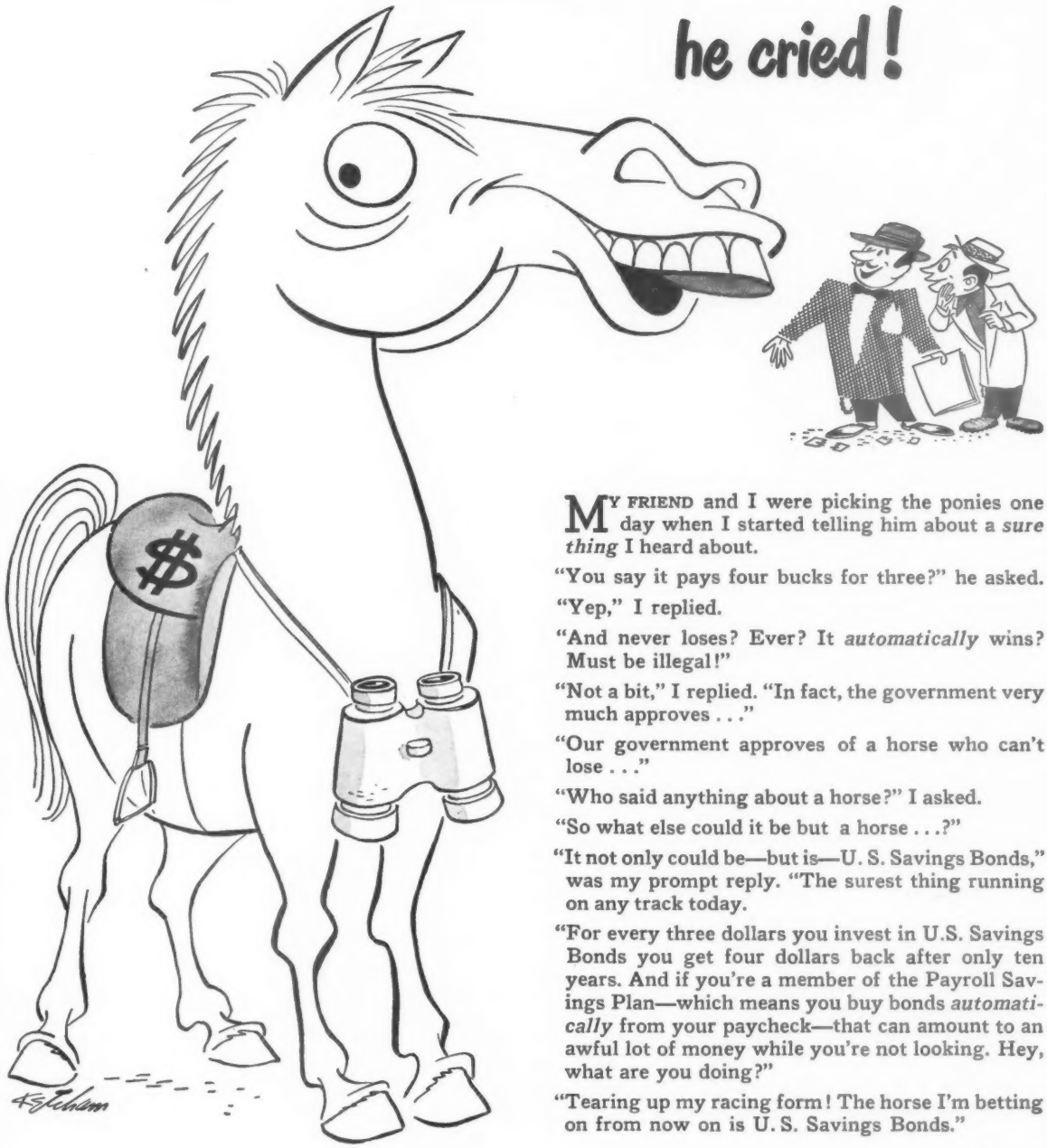
On the eve of Dr. Bowman's retirement, the trustees voted to create the Isaiah Bowman School of Geography as a fitting tribute to the man who had lent distinction both to his science and to his University. The school, however, still functions as a department of the Faculty of Philosophy and continues the cordial interchange of talents and ideas referred to above.

The list of new, or newly oriented, projects undertaken during the period under review could be extended almost indefinitely. The graduate Department of Aeronautics, concentrating on problems of the future of flight, made its appearance after the war. Sanitary Engineering, elevated to the stature of a graduate department and provided with new quarters, has won an enviable international reputation in fields much broader than its designation indicates. The Walter Hines Page School of International Relations, alert to the needs of the times, has established a small colony of Mongols on the campus (headed by a colorful and powerful, though exiled, "Living Buddha" from Outer Mongolia), and is engaged on a vitally important study of the language, geography, economy, and politics of this strategically important region.

This quick survey of a University and a decade is obviously suggestive rather than comprehensive. There is scarcely an area of activity at Hopkins which has not responded in some degree to the rapid changes which have occurred in the period. This article has accomplished its purpose if it has reported certain of the major developments and if, in the process, it has suggested certain trends.

Whether the trends are good or bad, whether they are temporary or fairly permanent, are questions which only the future will disclose. Certainly this reporter does not wish to don the cloak of the prophet except with respect to a single forecast. Johns Hopkins as a small, relatively young institution, has found it much easier than many of its older and larger neighbors to adjust quickly to new needs and new conditions. The forecast is that Hopkins will continue to do so; that it will remain in the forefront of American universities as a proving ground for new enterprises and new ideas in higher education and research.

"There's no such animal," he cried!



MY FRIEND and I were picking the ponies one day when I started telling him about a *sure thing* I heard about.

"You say it pays four bucks for three?" he asked.

"Yep," I replied.

"And never loses? Ever? It *automatically* wins? Must be illegal!"

"Not a bit," I replied. "In fact, the government very much approves . . ."

"Our government approves of a horse who can't lose . . ."

"Who said anything about a horse?" I asked.

"So what else could it be but a horse . . .?"

"It not only could be—but is—U. S. Savings Bonds," was my prompt reply. "The surest thing running on any track today.

"For every three dollars you invest in U.S. Savings Bonds you get four dollars back after only ten years. And if you're a member of the Payroll Savings Plan—which means you buy bonds *automatically* from your paycheck—that can amount to an awful lot of money while you're not looking. Hey, what are you doing?"

"Tearing up my racing form! The horse I'm betting on from now on is U. S. Savings Bonds."

Automatic saving is <u>sure</u> saving—U.S. Savings Bonds

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